June 2002
Volume 70 No 6

Amateur Radio

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WIRELESS INSTITUTE OF AUSTRALIA

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ALARAMEET 2002
Murray Bridge South Australia 5 & 6 October

A few drops of Homebrew

The Sunday 40-Metre CW Net Reaches 1500 Sessions

An HF Receiving Converter

WIA FEDERAL CONVENTION 2002

Peter Parker VK3YE demonstrates a 9 metre collapsible mast
(more pictures inside back cover)

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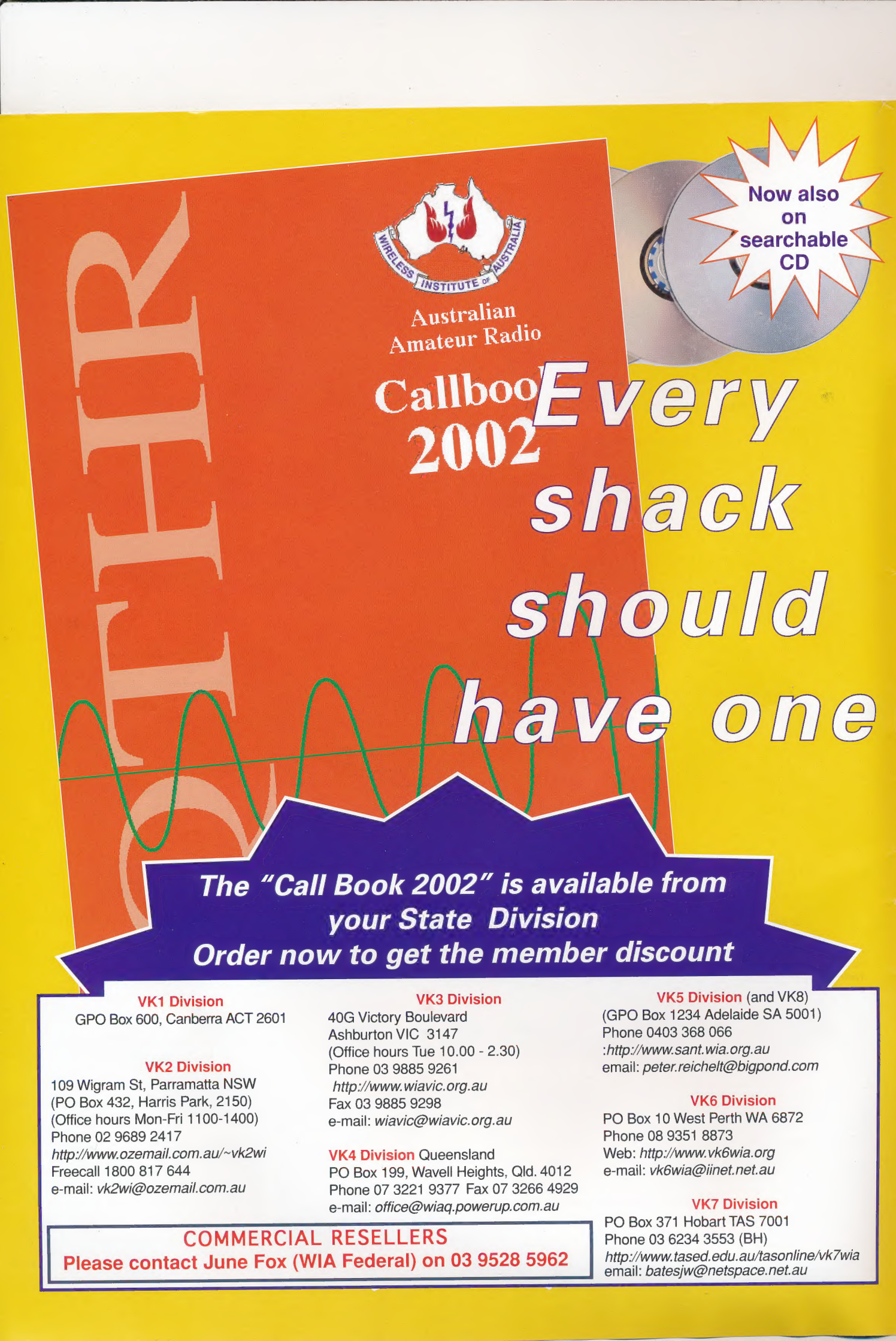
Will your station meet EMR requirements?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Our cover this month

ALARAMEET 2002 to be held in Murray Bridge SA, on 5 & 6 October. The steamboat, Captain Proud is where some of the sessions will be held

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the Federal Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA Federal Office (until stocks are exhausted), at $4.00 each (including postage within Australia) to members.

Photostat copies

When back issues are no longer available, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest
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Founded 1910

Representing
The Australian Amateur Radio Service

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International Amateur Radio Union

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Editorial Comment

Colwyn Low VK5UE

Enthusiasm is infectious!

I do tend to procrastinate a bit but this month even the adrenalin has not kicked in until the very, very last minute. I have been frustrated by all the other things in my life keeping me from doing just one or two little things with my Station. I have had the few moments now and then to sort out what I want to do but never the occasion to put them together. I suppose we all have these times.

The article in this issue on EMR has also provided food for thought. Does the end fed wire antenna, with its insulator 2 metres up and at the back of a garden bed meet the separation criteria? If I put the 80 metre loop round the block fence on transmit will it be high enough? Do I have to lift it to at least 5 metres? Can I assume nobody next door ever goes between their shed and the fence? Are they shielded in their tin shed? Lots of food for thought. The real challenge is not to give up.

We have had the federal convention and some change of coordinators. I hope now we can all work for the good of Amateur Radio in Australia and for all Australian Amateurs. There are too few of us to waste time on minor disagreements at the cost of major issues. I hope we can get more of the good will evident at the Convention working to make the WIA function as if it were an Australia wide body and not separate Divisions. The working party will need to sort out what we have to do together for the common good and what we have to do on a regional basis for our own specific benefit.

We need to do something to bring the community usefulness of Amateur Radio skills more to the notice of the community. We need to make more people aware that Amateur Radio exists as a hobby almost anyone can participate in. We need to advertise when we are out on Field days, when we help with JOTA, when we are on WICEN exercises, when we help a community organisation with communications. Events like the Australian Rally Championships, which might not be viable without WICEN communication support, should be exploited to the full. We need to show that we as Amateur Radio Volunteers can provide a professional service and that this service is available in the case of Civil Emergency. So please make sure when you do help out that your vehicle or tent carries signage for WICEN and AMATEUR RADIO, maybe even a plug for your local Radio Club.

While on that topic we also have to adjust to the fact that what attracted the old guard to Amateur Radio before 1952 is not what will attract people to Amateur Radio in 2002. I still remember 1952 and the things I did but that was 50 years ago and Man has been to the Moon since then!

So keep active, work on new modes, have fun and remember enthusiasm is infectious.

Silent Key

It is with great sadness we record the passing of **Kingsley VK5 AKN.** His key will be missed. A full obituary will be published in July *Amateur Radio*

Ernest Hocking VK1LK
email: president@wia.org.au

WIA Federal Convention

Deja Vu

The day after the 2002 AGM and Federal Convention I found myself in the WIA Federal Office in Caulfield. Browsing through old copies of AR I was delighted to come across a bound set of issues for 1979 and my eye was drawn to two articles in particular. The first was a reference by David Wardlaw, the then WIA Federal President, to the Arnold report and the decision not to implement the proposal to move towards a national organisation. The second was a thank you to members who had made donations towards the funding of WARC 1979. I think the office staff must have wondered just what I was thinking as a very large smile appeared on my face as I thought about the coincidence in light of the outcomes of this year's AGM.

The 2002 AGM

The 2002 AGM topped off a very busy year for the WIA. Although we did not complete everything that we had set out to achieve in 2001/2002 I believe that we met most of our stated aims and more importantly some other unplanned ones. I hope to be able to delivery to members a detailed report on the weekends discussion in the July issue of AR. In the meantime I would refer any member who wishes to find out more to the WIA Victoria web page www.wiavic.org.au which has an excellent summary of the weekend. From my perspective a number of agenda items warrant special mention.

WIA Structure

At this year's AGM the council agreed to establish a small working party to review the current structure and direction of the Institute. In the parlance of modern business this might well be referred to as developing a Strategic Plan. I am currently trying to recruit a small experienced team who can conduct this review. If you believe that you have the experience to assist in this please make contact with me. I am looking for individuals with experience of corporate structure and knowledge of company law, as well as broader business experience.

AR

Just before the start of the AGM, I sat down with the directors and the publisher to review progress to date. Looking at the pilot results reveals that the decision to place AR onto the news-stands has been well received. The council were presented with future options including:

- stop the current pilot,
- extend the pilot for a further period of time, or
- move to a full Australia wide distribution.

I am pleased to report that the council in principle agreed to move to full distribution of AR throughout Australia subject to confirmation of the May take up.

Whilst on the matter of AR I would like to add my personal thanks to all of you who have taken the time to respond to the survey. For those of you who have included personal notes I will try and get back to you all as soon as practicable.

AR Editor

No small part of the recent success of AR is due the excellent work put in by our editor Colwyn Low. However I am sad to report that Colwyn will be unable to continue as editor beyond the end of this year. As a result I am looking for a willing volunteer to step into Colwyn's boots. You don't have to be a technical wizard, that's what our Publisher and technical editors do. However you do have to be good with words. If you have the time to devote to this task and would like to be able to influence the future direction of amateur radio this is a great opportunity and I would be delighted to hear from you. I am sure that you will all join me in saying a very well deserved thank you to Colwyn for his sterling efforts.

WIA President, Ernie Hocking

Education and recruitment

We were lucky to have Ron Bertrand in attendance at the AGM as part of the VK4 contingent. Ron provided the council with an enlightening presentation on progress made in respect of the training of new amateurs. As a result of information provided we will be taking the message of the benefits of amateur radio to national and state education authorities over the ensuing months. If you have any contacts in the world of education then I would be delighted to hear from you. We need to sell the message about amateur radio more widely.

On a sadder note I have to report that our long serving education officer Brenda Edmonds was not re-elected this

continued on page 5

Will your station meet EMR requirements?

Jim Linton VK3PC

All radio amateurs will be required to know about new Electromagnetic Radiation (EMR) controls that are expected to be included in amateur station licence conditions from 1 July 2002.

The mandatory EMR controls, limiting the public's exposure to radio frequency radiation from amateur transmitters, already apply to other radio transmitters including mobile phones operating between 3kHz and 300GHz.

The standard being used by the Australian Communications Authority (ACA) is well below the level that is known to have adverse health effects on the human body, and in line with World Health Organisation recommendations.

The general public will become aware of the soon to be introduced EMR controls, through a series of newspaper advertisements placed by the (ACA), which are certain to put amateur stations in the spotlight.

The Wireless Institute of Australia (WIA) has been working with the ACA on the EMR regulatory framework over the past two years.

One of the WIA representatives involved in this project is Keith Malcolm VK1ZKM, has said it would have a minimal impact on the Amateur Service. Most stations will automatically comply with the requirements.

Keith VK1ZKM said, "The framework does not impose any new basic obligations on licensees to operate their transmitters safely in terms of human exposure to RF energy – but it will define requirements to evaluate and the ability to demonstrate compliance.

> "In practice this means the identification of locations surrounding transmitting antennas where RF fields exceed the general public exposure guideline limit, and restriction of the access to such locations."

The ACA's framework is to apply only to protect the general public, he said, with radio amateurs defined as "aware users", meaning it does not deal with their exposure. Similarly, the radio amateur is expected to control exposures of others in their household.

The framework does address the exposure requirements for neighbours and other members of the public, although again it is important to stress that the average amateur station will easily comply.

Compliance Requirements:

The proposed framework defines two levels of compliance action.

Compliance Level 1 - applies to transmitters that are covered by either of the following conditions:

(a) The total average power fed to all antennas at the site must not exceed 100 watts and antennas must be out of reach

(b) The bottom of the lowest antenna must be at least 10 metres above ground and the average EIRP does not exceed 3200 watts.

Compliance Level 2 - which requires measurements and documented proof of compliance, applies to all other transmitters.

EMR in licence conditions

It is proposed that the new regulatory framework, which will be reflected in the Licence Condition Determinations (LCDs) for the Amateur Service (and to all apparatus licences), will begin on 1 July 2002.

That means that amateur stations operated under new amateur licences issued on or after that date must comply with the framework. Existing licensees will have until 1 October 2002, to comply.

Keith VK1ZKM said at this time, the precise wording of the EMR requirements to be included in the LCDs is unknown, because it is still being written. The WIA will continue liaising with the ACA during this process.

However, he said, the ACA through a series of EMR implementation workshops which the WIA attended along with other radio user groups, has made its final proposals well known.

Impact on the Amateur Service

The proposed regulatory framework will have minimal practical impact on the average amateur installation.

Because the compliance category is based on average transmitter power, radio amateurs operating in accordance with the power limits in the Amateur Licence Condition Determination for SSB (400 watt PEP) will easily meet the 100 watt criterion of Category 1 clause (a).

Unprocessed speech signals have a peak to average ratio in excess of 10 dB, so even if reasonable amounts of compression are employed, the average power at 400 W PEP will not exceed 100 watts.

Since the power criterion is based on power at the antenna feed-point, even the 120 watt mean power limit for continuous carrier modes (eg RTTY, AM, FM etc) will comply with the Category 1 clause (a) criterion, when feed-line losses are taken into account in a typical installation.

Compliance with the Category 1 clause (a) criteria then needs only a practical determination of what constitutes "out of reach" for the antenna installation.

This is something of a subjective assessment matter and a realistic determination will depend on the situation.

For a home installation, a simple guideline such as keeping the lowest point of an antenna at least 2 metres above head-height, or installing the antenna at least 2.8 metres from a property boundary or other location accessible to the general public, can be used.

Mobile installations affected too

For mobile installations, clearly such separation distances cannot be achieved, so the best that can be done is to install any antennas such as to minimise the possibility of accidental contact.

This means that centre of roof or centre of boot mountings will be preferred and that "gutter-grip" installations should be avoided.

The mobile amateur station operator transmitting while stationary should be alert to EMR exposure from the antenna to others. It is understood that emergency services are proposing to fix warning stickers to antennas on mobile vehicles.

Operators of beacon or repeater installations that can transmit simultaneously on multiple frequencies will need to determine if their installations comply with either of the Category 1 clause (a) or Category 1 clause (b) criteria.

Even though the licensees of stations that comply with Compliance Category 1 are not required to undertake an assessment of compliance nor to keep records, it would be wise to make a formal note in the station log, to record output power levels achievable on each operating band. Such a record would serve to justify treating the installation as Category 1.

Very high gain antennas

Operators of specialist stations such as EME or weak-signal tropo-scatter installations that use very high gain antennas may wish to check the field levels around their antenna using either the ACA's self-assessment materials or other methods as defined in AS2772.2 even though they comply with the Category 1 compliance criteria.

Operators using high-power permits or operators of beacon or repeater stations that do not comply with the Category 1 criteria will need to undertake a formal assessment of compliance and keep the records of that assessment.

This assessment can be undertaken using the self-assessment materials compiled by the ACA or by use of any other method of modelling or calculation that can be derived from the methods described in AS2772.2.

The self-assessment materials are available from the ACA web site at http:/ /www.aca.gov.au/standards/emr/ amateur.rtf . These materials are based on the exposure guidelines in the ACA standard and provide a conservative (ie errs on the safe side) estimate of minimum separation distances.

Information about the new ARPANSA standard can be found on the ARPANSA WWW site at http:// www.arpansa.gov.au

Reference Documents

At present there are two sources of reference material that define acceptable levels of general public exposure to RF energy. One of these is the ACA's *Radiocommunications (Electromagnetic Radiation – Human Exposure) Standard* that is derived from the former Australian Standard AS2772.1 (Int)-1998. The second is the recently released ARPANSA standard *Radiation Protection Standard - Maximum exposure levels to radiofrequency fields - 3kHz to 300GHz.* Although there are differences in detail between the practical compliance limits in each standard, they are both derived from the same underlying exposure limit, so either can be used to demonstrate compliance. An additional document, AS2772.2, defines measurement methods and means of determination of compliance with RF exposure limits.

ar

WIA Comment continued

year. Brenda has been in the role of education officer for some 21 years and has performed an excellent job during this time. I am sure that you will all join me in thanking her for her dedicated efforts over such a long period.

Foundation Licence

It is hard to talk about education and recruitment of amateurs these days without reference to the so called "foundation licence". During the weekend we spent a significant amount of time addressing this issues. After much debate it was agreed to approach the ACA to try and progress the matter on the basis of a simple to gain entry qualification

WRC funds

With 2003 fast approaching the matter of funding the WIA delegates to the World Radio Conference was discussed. We have been preparing for this major event for a few years. Amongst the more important aspects of preparation is the matter of funding the WIA delegation. Budgeting in previous years means that we now have almost enough money set aside to just meet the expected costs of sending the delegation. As such it was decided not to impose any further financial levies at this time but rather ask members for donations to cover any further costs of WRC and other international representations. If you are able to make a small donation to help out in this respect then it will certainly make the funding of this expensive but very important activity simpler for our treasurer.

I will bring this issue of my notes to a close and wish you all 73s. I look forward to hearing your views on any amateur radio related matters and hopefully circumstances will permit me to meet with many more of you over the next 12 months.

Ernest Hocking VK1LK
email: president@wia.org.au

"Give me a place to stand, and I will move the Earth"

Archimedes (ca. 235 bc)
Concerning levers

An HF Receiving Converter

Drew Diamond, VK3XU
45 Gatters Rd.,
WONGA PARK 3115

As promised in a recent article about construction of a 1.8 - 2 MHz receiver (Ref. 1), here are details of the companion converter, necessary to obtain access to our most popular HF bands. Although intended for use with a 'tuneable I.F.' of 1.8 to (about) 2 MHz, the converter may be applied to any other desired I.F. For instance, you may have a receiver which has quite acceptable band-spread, selectivity, image rejection and sensitivity at (say) 2, 3, or 4 MHz, but has increasingly poor performance above (typically) 10 MHz. Some of the lovely old 'boat-anchors' are very much in this category. By using an HF converter, the receiver's essential characteristics at 3 MHz are retained on every desired HF band.

A 3 MHz first I.F. is a good choice in terms of conversion crystal economy, because cheap, off-the-shelf computer crystals are available at 4 MHz (to give access to 7 MHz), an 11 MHz crystal gives access to 14 MHz, a 15 MHz crystal gives access to 18 MHz, and an 18 MHz crystal gives us 21 MHz.

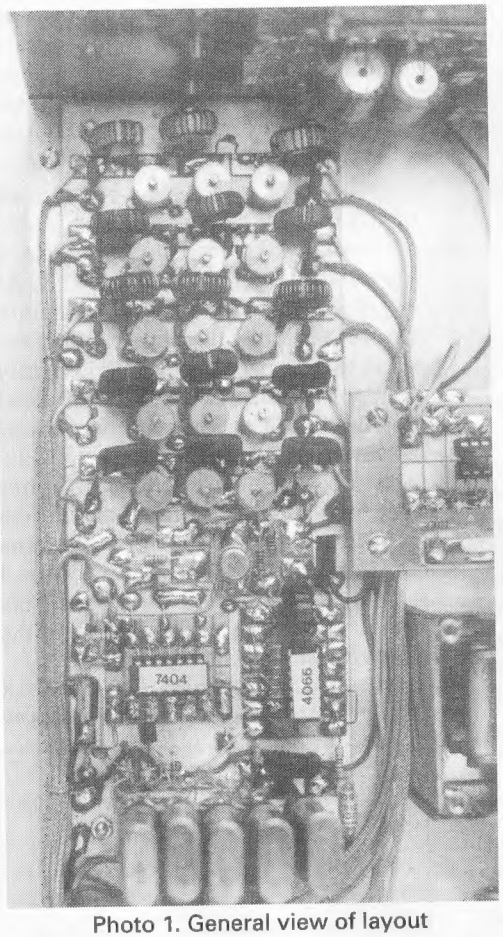


Photo 1. General view of layout

Circuit

In order to obtain satisfactory rejection of image and 'alias' frequencies, it was found necessary to use a three-resonator band-pass filter (Refs. 2 and 3) for each desired band. The usual Butterworth circuit has been re-arranged here to the pi configuration, where two of the coils are effectively in series with the input, thus offering greater attenuation to unwanted HF and VHF signals. Worst case image rejection (signal f minus twice the I.F. = 17.4 MHz) occurs on 21 MHz, where the figure is -45 dB.

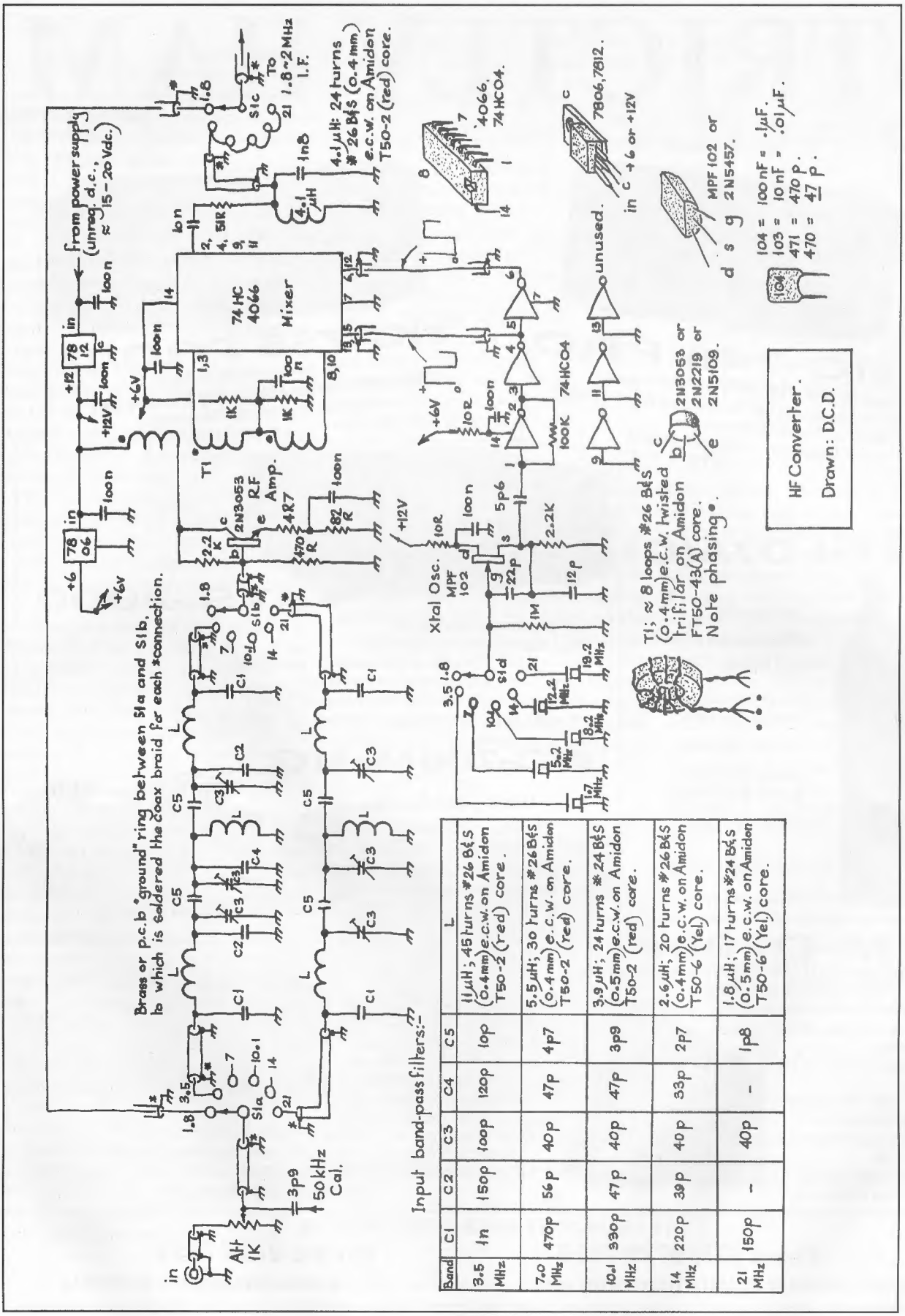
Although seldom required, a simple pot style attenuator is fitted at the input. Sensitivity is improved by the inclusion of a prudent amount of RF gain- about 10 dB, supplied by a single 2N3053 (or similar) bipolar transistor Q1 in a conventional 'strong' broadband class A amplifier. Sensitivity of the prototype is better than 0.1 microvolt for 10 dB Signal + Noise : Noise, which typically represents the smallest readable HF signal in a quiet location.

A CMOS switch mixer is again used here, it being is one of the 'strongest' HF mixers build-able with ordinary electronics parts (Ref. 4). Ideally, the output of the CMOS mixer (as with any 'commutated' type mixer) should look into 50 ohms resistive for all frequencies present at the mixer's output (not just the expected 'sum and difference' products), which job is normally done with a diplexer. It was found that a simple diplexer, a tank comprised of a 4.1 microHenry coil and 1.8 nF capacitor, tuned to the wanted IF frequency (1.8 MHz), and a series 51 ohm 'dump' resistor (where all the unwanted energy is absorbed) does the job rather well. For I.F.'s other than 1.8 MHz, it will be necessary to change the diplexer values. Their reactance should each be 50 ohms. At 3 MHz for example, the coil will need to be 2.7 microHenries (18 turns #26 B&S, T50-2 toroid- or a stock RF choke), and the capacitor should be 1 nF.

When fitted within the 1.8 MHz tuneable I.F., the resulting HF receiver is remarkably immune to strong unwanted signals, and performs very satisfactorily in a real environment.

For a first I.F. of 1.8 MHz, each conversion crystal must be 1.8 MHz lower than the required band, or conversely; Xtal f = desired f minus 1.8, which gives 1.7 (for 3.5 MHz), 5.2 (7 MHz), 8.2 (10 MHz) 12.2 (14 MHz) and 19.2 (21 MHz). The MPF 102 FET crystal oscillator is capable of powering a wide range of crystal types and frequencies. The 180 degree out-of-phase signals necessary to drive the mixer are obtained using three gates of an ordinary 74HC04 HEX inverter chip.

Internal spur (birdie) production is kept down by the use of shielded wire or miniature coax for signal routing. Rather than use the existing supply rails, the converter is supplied from the receiver's unregulated supply (about 20 Vdc) through separate +6 and +12 V regulator chips, which results in few internal spurs, these being well below equivalent sub-microvolt level.


HF Converter.
Drawn: D.C.D.
Input band-pass filters:-
Brass or p.c.b "ground" ring between S1a and S1b, to which is soldered the coax braid for each *connection.
From power supply (unreg. d.c., ≈ 15-20 Vdc.)
74HC 4066 Mixer
2N3053 RF Amp.
Xtal Osc. MPF 102
T1: ≈ 8 loops #26 B&S (0.4mm) e.c.w. twisted trifilar on Amidon FT50-43(A) core. Note phasing •.
2N3053 or 2N2219 or 2N5109.
MPF102 or 2N5457.
4066, 74HC04.
7806, 7812.
unused.
in c + 6 or +12V
4.1μH: 24 turns #26 B&S (0.4mm) e.c.w. on Amidon T50-2 (red) core.
1.8~2 MHz I.F.
50kHz Cal.
104 = 100nF = .1μF.
103 = 10nF = .01μF.
471 = 470p.
470 = 47p.

Band	C1	C2	C3	C4	C5	L
3.5 MHz	1n	150p	100p	120p	10p	11μH; 45 turns #26 B&S (0.4mm) e.c.w. on Amidon T50-2 (red) core.
7.0 MHz	470p	56p	40p	47p	4p7	5.5μH; 30 turns #26 B&S (0.4mm) e.c.w. on Amidon T50-2 (red) core.
10.1 MHz	330p	47p	40p	47p	3p9	3.9μH; 24 turns #24 B&S (0.5mm) e.c.w. on Amidon T50-2 (red) core.
14 MHz	220p	39p	40p	33p	2p7	2.6μH; 20 turns #26 B&S (0.4mm) e.c.w. on Amidon T50-6 (Yel) core.
21 MHz	150p	-	40p	-	1p8	1.8μH; 17 turns #24 B&S (0.5mm) e.c.w. on Amidon T50-6 (Yel) core.

figure 1

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Construction

A suggested layout is shown in Photo 1. The five input band-pass filters, CMOS mixer, crystal oscillator, driver and regulator chips are accommodated upon a plain printed circuit board measuring 75 X 195 mm. Layout is not especially critical, and just about any preferred construction method, such as 'dead-bug' should be satisfactory provided that all RF component connections are reasonably short. For the prototype I have used 'paddyboard' style (please see Ref. 5). The '4066 and 74HC04 chips are fitted into sockets, which in turn are attached with 1 mm tinned wires to suitably sized segmented substrates as described in Ref. 5. The circuit shows where 50 ohm miniature coax (or shielded wire- it is very close to 50 ohms, and adequate for short runs) is used for the inter-connections.

For band-changing, a 4-pole/6-position wafer switch is necessary. Like variable capacitors, wafer switches, suited to band-changing duty, are no longer (as far as is known) available from our usual suppliers. They are not rare however, and suitable items should be obtainable from ham-fests, or bartered from radio friends etc. It may be necessary to configure your switch from several individual wafers, as required. If you can arrange for 4-pole 8 or 10-position (as spares for expansion)- so much the better. A circle of sheet brass, or double-sided circuit board should be interposed between wafers S1a and S1b as a shield, and also as a convenient anchor to which is soldered the coax braids (marked upon the circuit with an asterisk*), thus maintaining the continuity of the coax braid. If not done accordingly, problems may be encountered with excessive internal spur production.

The crystal oscillator components are fitted upon a small board measuring 30 X 45 mm, which is mounted vertically onto the converter board. The 'earthy' side of the five crystals may then be soldered between the top of the oscillator board and the their corresponding wafer switch tags. A suggested layout is pictured in the oblique view, Photo 2.

Tune-up

Inspect all wiring and component locations and confirm that everything is as it should be. Apply power, then measure the +12 and +6 Vdc supplies. If an oscilloscope is available, use a X10 probe and observe the square waveforms that drive the mixer (as shown on the circuit) which confirms that the crystal oscillator is working. Click the bandswitch around and check that all crystals will fire-up in turn. The same X10 probe may be used with a counter to check that the crystals are oscillating at or near their nominal frequency. No 'scope or counter? Listen for the crystal's signal on a general coverage or SW receiver by tuning to each crystal frequency (a portable SW receiver makes a handy tool in radio work).

Set the 1 k attenuator for minimum loss. Pre-set all band-pass filter trim caps to about half capacitance initially. If a signal generator is available, adjust the generator to deliver about 10 or 30 microvolts to the receiver's input (which may be reduced later during final tweaking). Otherwise, simply connect an antenna to the input. Starting at (say) 3.5 MHz, carefully align the three trim caps in the 3.5 MHz input band-pass filter for best sensitivity across the band. With this done, the receiver should sound quite lively. Do the same for the remaining bands fitted.

Parts

DSE, Jaycar, Electronic World and Altronics can supply most of the ordinary electronic components. My 40 pF trim caps and most other components were purchased from my local Jaycar. For good stability, the 12 pF and 22 pF capacitors in the oscillator should be NP0 ceramic types. All others (including coupling and bypass) may be monolithic or ordinary ceramic types. There are no known suppliers (to the hobbyist) of new wafer type band-change switches, but these are by no means rare parts. Ask your mates at the radio club- or look for suitable items at the next swap-meet. See Hamads in AR for your local Amidon supplier.

Bibliography

1. *A Practicable Superhet Receiver for 1.8 - 2 MHz*; Diamond, AR, May 02.
2. *The Double-Tuned Circuit: an Experimenter's Tutorial*; W. Hayward, W7ZOI, QST, Dec. '91.
3. *Extending the Double-Tuned Circuit to Three Resonators*; W. Hayward, W7ZOI, QEX, Mar/Apr '98.
4. *An Ultra-Low Distortion HF Switched FET Mixer*; E. Kushnick, RF Design, Sep. '92.
5. "Paddyboard" Circuit Construction"; Diamond, AR, Feb. '95.

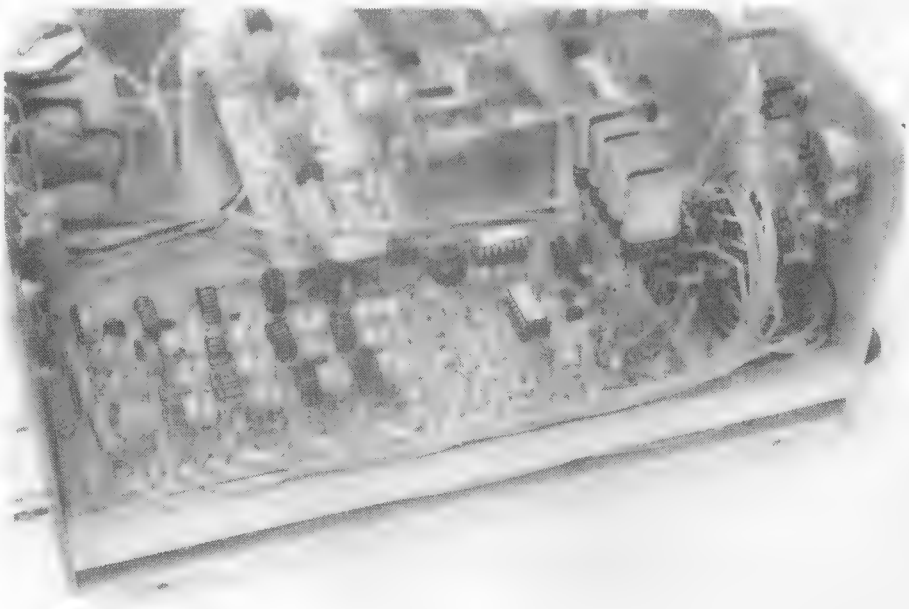

Photo 2. Oblique view showing crystal mounting and switch

A few drops of Home Brew

Drop one
DC –91 Revisited

Max Riley VK2ARZ
6 Baringa Road
Mortdale Heights NSW 2223

The first project is a direct conversion receiver based on the DC-91 unit previously described by Drew Diamond (ref. 1). My version of this receiver has been modified to provide additional features and is shown in Photo 1.

These are:

1. A front-panel mounted antenna trimmer.
2. A 20 dB attenuator to assist in reception of very strong signals.
3. AVC applied to the RF amplifier stage.
4. A tuned AF amplifier to reduce the bandwidth on SSB reception and increase the overall gain of the receiver.
5. An active audio filter to provide sharp selectivity on CW reception.
6. An "S" meter driven by the audio derived AVC.
7. A 100 kHz crystal calibrator.
8. Oscillator tuning bandspread from 3495 to 3705 kHz.

The Photo 2 shows the project during construction. The maze of wires at the top is the leads left long for testing during development. They were finally cut to length and bundled onto cables placed along the divider walls.

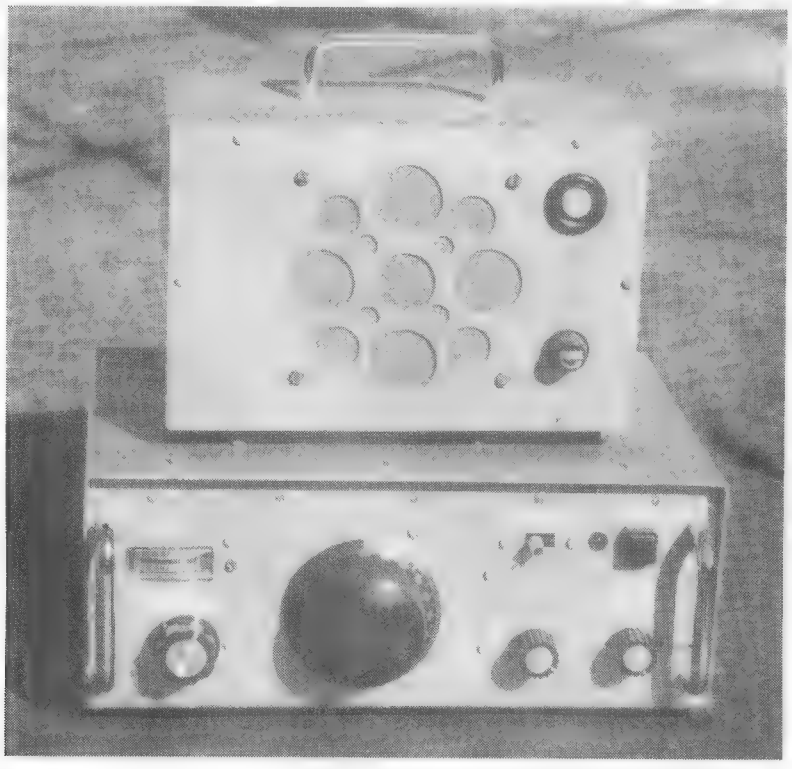

Photo 1. My DC91 with power supply and speaker unit

The board at the bottom is the DC-91 receiver board. The VFO is in the small shielded box in the centre and the L-shaped section at the top contains the tuned audio amplifier, active audio filter for CW reception and the 100kHz crystal calibrator (contained in the tub-shaped container). The slide switch and push button on the right of the front panel (top right in photo) control the last two units. The phone jack, antenna coaxial connector and attenuator are fitted to the rear panel. At this stage of construction AVC had not been included in the design and the S-meter had not been fitted to the front panel.

The balanced design of the receiver and the complete shielding between sections has resulted in zero radiation from the VFO. The braced construction has produced a unit, which is mechanically and electrically very stable. The power supply and the speaker are housed in a separate cabinet (right of photo). This ensured a VFO with very little frequency drift, as temperature rise within the cabinet is minimal. The space at the rear of the VFO will eventually contain a two-watt CW transmitter.

References and Further Reading.

1. DC-91 Receiver, AR 1991, Drew Diamond VK3XU.

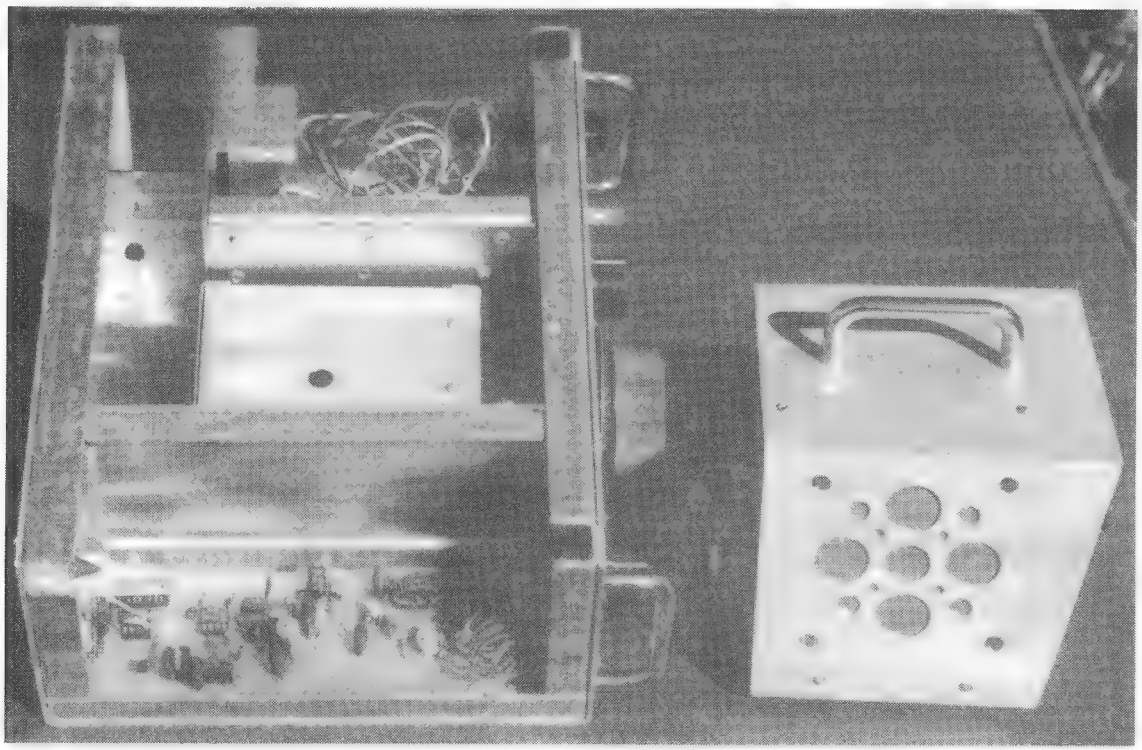

Photo 2. DC91 under construction with the audio output field strength meter on the right

Drop two

Field Strength Meter

Home Brew

The second unit is a sensitive, broadband field strength meter. This unit is based on two articles in QST magazine published 25 years apart, although actual construction did not start until 40 years after the first article was published.

This meter, shown in photo 3, is the one I use for most of my antenna work. The input contains a junction FET in a source follower circuit. Q1 serves only as an impedance transformation device. This permits the short sampling antenna to be matched to the input of the first RF amplifier Q2. Low impedance input is found at the source of Q1, as shown. I elected to use two RF amplifiers rather than one RF amplifier and one dc amplifier. There are no tuned circuits in my Field Strength meter, but if commercial signals interfere with your meter readings (depends on your location); you may add a band pass filter or a tuned circuit between J1 and the pickup.

The circuit is shown in Figure 1. My unit can provide either visual output via the front panel meter, or loud speaker output from an audio VCO. Refer to the third "Drop". Both these outputs can be delivered remotely via front panel sockets. The switch between the two sockets selects the mode of operation. The level of the dc voltage developed from the amplified and detected signal is set by the potentiometer alongside the meter. This sensitivity control sets the threshold of the meter reading or the onset of the change in audio tone. I adjusted the components of the VCO so that the audio tone was a low growl in the absence of any signal input. The tone increases in pitch with increased signal input. The rear panel holds terminals for high impedance input and a coaxial socket for low impedance input. It also holds a fuse and a four-pin panel-mounted polarized plug for power input. I normally operate it from a 12 volt dc source, usually a rechargeable gel cell.

The amplifier which drives the detector circuit operates from about 2 to 50 MHz. I use it for a variety of field strength determinations. The audio output mode has been particularly useful for checking RF leakage around

shielded enclosures. It has also been used to locate rectifying joints in downpipes and guttering. These are a constant source of TVI. In these applications, a "snoop loop" connected to a length of coaxial cable is attached to the low impedance input of the unit.

Incidentally, the original QST article (ref. 1) shows the pin connections of the input FET incorrectly. As a result I destroyed the first FET installed in my amplifier. Please alter your copy of the QST article if you have it in your library. I was unable to obtain the transistors listed in the RF amplifier in this circuit. I used 2N2222s as a replacement. To obtain reasonably linear operation of the RF amplifiers, I changed the 3.3k forward bias resistors in the two stages so that the collector voltage on each stage was about 60% of the supply voltage.

Reference and Further Reading

1. Learning to use Field-Strength Meters, QST March 1985, Doug DeMaw,W1FB.

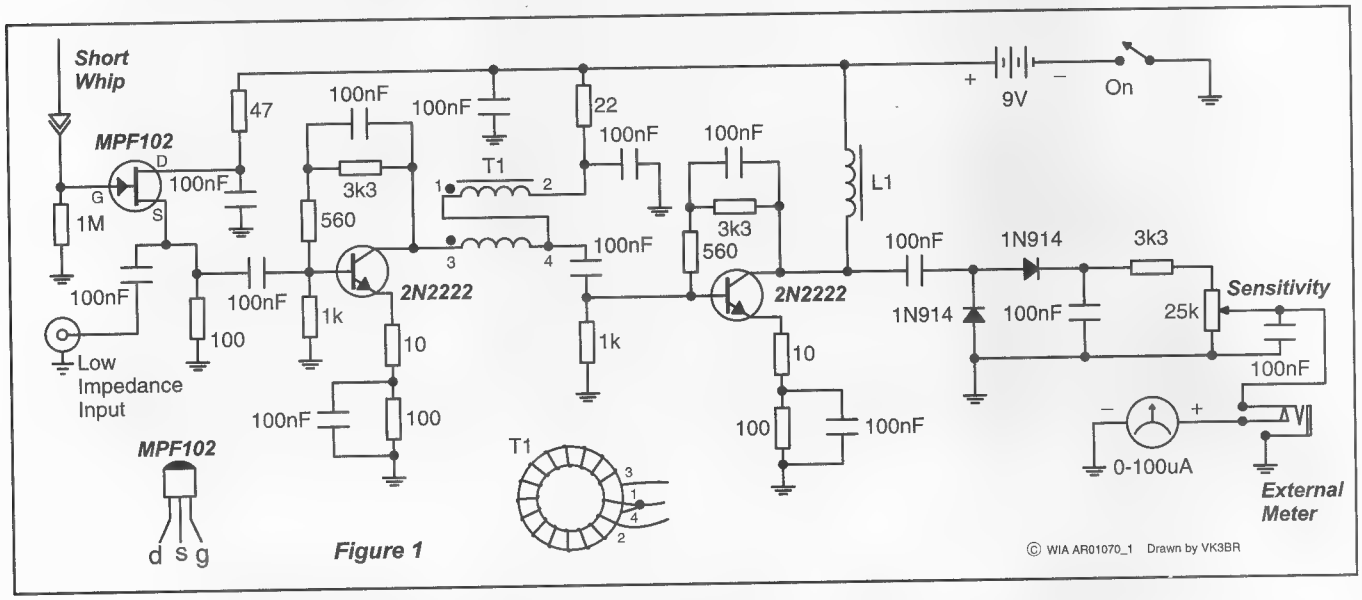

Figure 1 – Field strength meter schematic.
L1 – 15 turns of No 26 enamel wire on an Amidon FT50-43 toroid core.
T1 – Bifilar wound transformer, 15 bifilar turns (twist No 26 enamel wires for eight twists per inch) on an Amidon FT50-43 toroid core.

Drop Three
Audio Output Meter

Home Brew

QST originally described the audio VCO as a device for meter reading by sightless amateurs (ref. 1). I found the published circuit was unreliable and modified it by inserting a forward bias resistor as shown in the attached circuit. (figure 2) The transistors used in this part of the circuit were NPN and PNP standard replacement types.

Various gadgets have been devised to aid the ham without sight, in tuning his transmitter, and many are doing very well with them. Most of these devices use a voltage picked up at an appropriate point in the transmitter circuit to change the tone of an audio oscillator in accordance with the change in voltage as the transmitter is tuned. Most sightless hams are able to memorize the particular tone that corresponds to normal transmitter loading.

More recent designs have made use of transistors to reduce bulk and weight and thus render the instrument more convenient to use. However, transistors are sensitive to changes in temperature, and while the operator may have no trouble in determining resonance in his transmitter, he cannot be sure that transistor drift has not shifted the oscillator pitch corresponding to normal loading. Thus, he may be underloading or overloading without being aware of it.

The unit described here, includes a simple comparator-type calibrator, which automatically compensates for any drift due to temperature effects or component aging. Furthermore, it is not

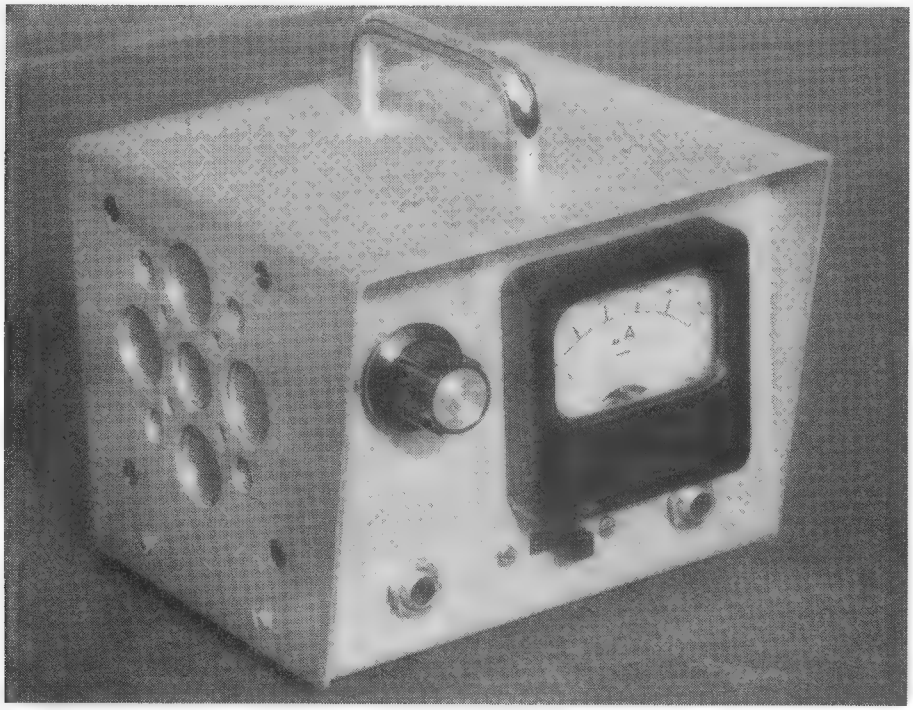

Photo 3. Field strength meter with audio output

necessary for the operator to memorize audio tones. He can actually "read" current values to an accuracy of 5 per cent or better on a Braille calibrated dial.

Circuit

The system shown in Fig. 2 was developed by W6CKV and the author, and has been used successfully by several of their sightless friends. The operating voltage is taken from the drop across the shunted 0-1 milliammeter commonly found in most transmitters, manufactured or homebrew. This voltage (0.03 to 0. 1 volt depending upon the internal resistance of the meter) is fed into a transistor direct current amplifier whose output voltage controls the frequency of an audio oscillator also employing a transistor.

The voltage comparator consists of a simple voltage divider operating from a single dry cell. Potentiometer *R2* is set at various points where its output voltages are the same as the voltage drops across the meter for various current readings. The Braille dial of the potentiometer is calibrated in any desired fractions of the full-scale meter value.

Then it is necessary only to adjust the comparator to obtain the same tone as produced with the meter connected, and read the comparator dial.

In the case of a multi-range meter, the voltage drop across the meter terminals is, of course, the same for all current ranges, so the operator must keep in mind the current range to which the meter is switched.

Reference

1. Meter reading by Sound, QST October 1960, Ken Blaney, W6PIV.

BR

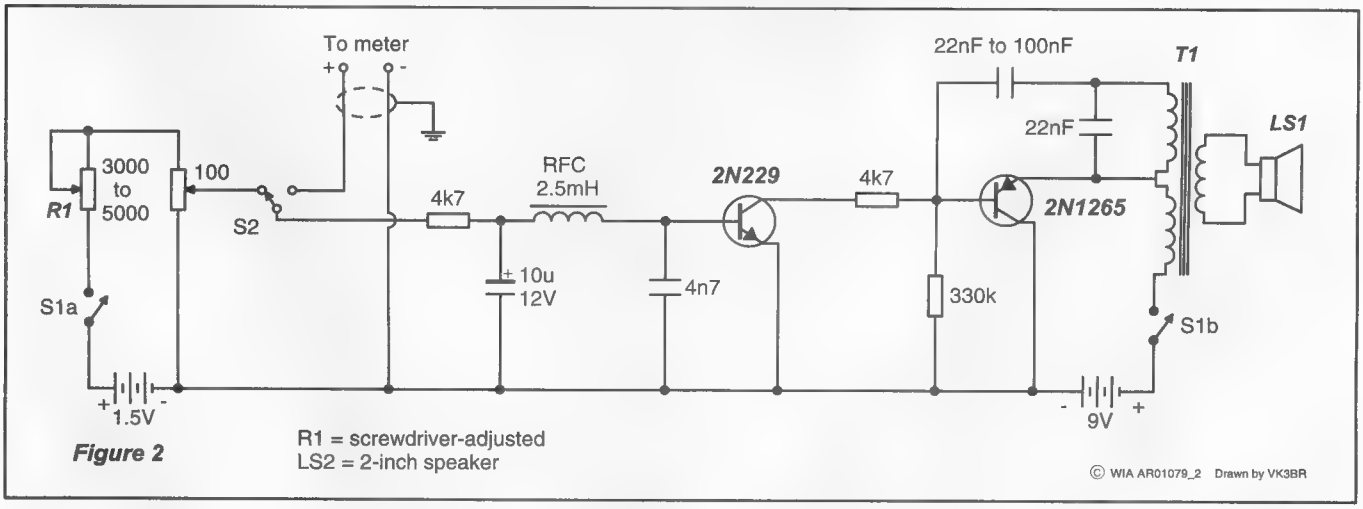

Figure 2

Figure 2 – Audible meter reader schematic.
LS1 – 2 inch speaker.
T1 – transistor output transformer, push-pull to voice coil.

The Sunday 40-metre CW net reaches 1500 sessions

Drew Diamond VK3XU
45 Gatters Road,
Wonga Park 3115.

Early in 1973, a group of keen east coast amateurs gathered to discuss the creation of a new style net for CW operators. These fellows beam at us from nearly thirty years ago in Photo 1. By the time you read this, the long-running Sunday morning 40 metre CW net will have clocked-up 1500 sessions. Net number 1 was probably run on the 10th of March 1973, under the control of Frank, VK4II, and a net has taken place almost every Sunday since that date.

Photo 1. The 1973 CWN meeting; L - R; Wally VK2EW, Al '2BF, wanted known, Dick '2AHR, Don '2SM, Art '2AV, Mac '2ADV, Bill '2XM, Tony '2BWC, Frank '4II, Jack '2YK.

For a conventional net; a group of operators, on an agreed frequency, take turns to have a say- 'round-table' style. On 'phone, such a scheme is generally productive, interesting and workable. On CW however, it's not so easy, due mainly to the varying levels of Morse skills and sending styles of the participants.

Back in 1973 it was thought a new CW net should be egalitarian, and encourage the participation of all interested persons who posses at least moderate Morse proficiency, and wish to polish, or maintain their skill. Only stations that can hear each other shall be 'paired', thus avoiding lost contacts. Speed shall not be a big issue, as the control station will endeavour to find another operator who is prepared to, or prefers to send at similar speed. Operators shall be able to come and go, call-in early or late (within the two-hour session) as desired, no excuses necessary. And the structure should prevent the net from being wholly dominated or monopolised by any individual (Ref. 2).

The net is still run along the same lines as originally devised, and takes place every Sunday morning (except RD Contest weekend and Christmas Day) from 10 AM to noon EAST In it's 30 year history, over 100 individual stations have taken part at some time, Typical attendance is about 14, each operator enjoying one or more QSOs. A number of SWLs also tune in to the net on a regular basis. In addition to the customary Q-codes, the ARRL QN codes for traffic handling have been adopted for the net, and suit very well. An abridged list of the most commonly used QN-codes (different from aeronautical QN codes) is included here. A full list may be found in Refs. 3 and 4.

This is how it works: The net control station (NCS) operates on 7025 kHz and calls; "CQ CW NET DE (call-sign) QNI PSE K". QNI is an invitation to report into the net. Rather than function as a round-table, the NCS will attempt to 'pair' stations as they initially call in, or as they return to the control frequency. When reporting in, or re-joining the net, on 7025 kHz send; "(your callsign) QNI". NCS will acknowledge; "R". If he is busy, or no other station is waiting for a 'partner', NCS will send; "PSE WAIT (didahdididit)", and go on to find a suitable station for you to work-probably by calling CQ again. If it is thought that you are new to the net, NCS may introduce himself and request your name, at approximately your Morse speed.

When a suitable station is on hand for you, NCS will confirm that you can hear each other, either by checking that the waiting station heard you call in, or by asking a station to QSV (send some V's), then "CAN YOU COPI VK——?. When it is confirmed that both stations hear each other, NCS will nominate a frequency. For example, let's assume that VK3BKU and VK2BWC are to be paired and moved to 7015 kHz. NCS will send; "VK3BKU ES VK2BWC PSE QSY 7015 - VK2BWC"- to which VK2BWC acknowledges by sending "R TU" (received thank you). Then NCS will

send "VK3BKU", to which VK3BKU will reply "R TU". VK3BKU and VK2BWC then move off and establish contact on 7015 kHz. Sounds tricky when written down, but a bit of listening and practice soon has the procedure properly understood.

The paired stations may then chat in the usual one-on-one manner of a QSO for as long as desired. Typical duration is about 10 or 20 minutes, but there are no strict rules. If you 'hit it off' with the other fellow, you can chat for as long as necessary (even beyond the end of the 'net' period, as sometimes happens for a really interesting discussion). Normally though, when the QSO has ended, both stations return to 7025 kHz, and at an appropriate moment report back to the net. If a new QSO is desired, send; "(your callsign) QNI", and await further instructions from the NCS, as noted above. However, if you wish to leave the net, send; "(your callsign) QNX", which is a request to be excused from the net. NCS will reply with something like; "R (your call-sign) TKS ES 73 - QNX" (thanks for joining in, 73 and you are excused from the net).

Photo 2. BBQ gathering to celebrate the 1000th CWN session at the home of Don, VK3BKU in Sep. 1992. Back row, L to R; Max VK2ARZ, Ivor '3XB, Geoff '3ED, Roy '3ELB, Joe '3BBN, Drew '3XU, Peter '3APN. Middle row L to R; Tim '3BCN, Len '3DXM, Harvey '3AHU, Ross '3ARC, Mait(land) '5AO, Geoff '3AC. Front row, L to R; Don '3BKU, Arn(old) '3AGW, Mavis '3KS, Eric '2BII, John '3AJY, Neill '5KQ.

To save handling time when communicating with the NCS, all redundant "throat-clearings" such as; message begins (dahdidahdidah) and that old-fashioned (dididididahdit) should be omitted. Just listen carefully, then jump in at a suitable pause (doublings do occur, but are soon sorted out), and try not to engage the NCS in lengthy chitchat, especially if things start to get busy.

At noon, the NCS will conclude business by sending a list of participating station call-signs; "QNE - QNS (list of call-signs) - DE (call-sign) QNF", usually with farewells as necessary from listening stations, sometimes just a sprinkling of friendly little dits, and dit dits.

The business of who shall control forthcoming nets is generally worked out among the regular net control stations some weeks in advance, often during the course of the net, or by e-mail. Controllers are usually East Coast (not necessarily fast) operators who have reached a good level of net skill, and can hear signals from VK1, 2,3,4,5 and 7 at least reasonably well under normal propagation conditions. Naturally, regular attendees are encouraged to volunteer for NCS duty when and if they feel able to do the job.

Sadly, several of the operators in the photographs are now silent keys. They would be pleased to know that new stations are welcomed into the net, and sufficient amateurs take on the role of NCS, so the net lives on. If you are keen on CW operation, and have some free time on a Sunday morning, you are invited to tune to 7025 kHz and join in the fun.

Common Use Amateur Radio Net QN Codes

QNE* Entire net stand by.
QNF Net is free (not controlled).
QNI Net stations report in*. I am reporting into the net.
QNJ Can you copy me? or Can you copy ...?
QNO Station is leaving the net.
QNP Unable to copy you (or....).
QNS Following stations are in the net* (follow with list).
QNS? Request list of stations in the net.
QNT I am leaving the net temporarily (e.g. QNT 5; back in 5 minutes).
QNX You are excused from the net.
QNX Request to be excused from the net.
You are excused from the net*.
* For use only by net control station.

References

1. e-mail and on-air correspondence with Don Ockley, VK3BKU.
2. "The CW Net- A First for Australia"; Frank Miller, VK4II, AR Oct. '73.
3. "Pounding Brass"; Gilbert Griffith, VK3CQ, AR Apr. '88.
4. The ARRL Operating Manual or ARRL Handbook.

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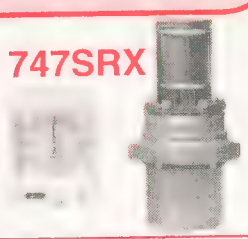

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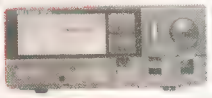

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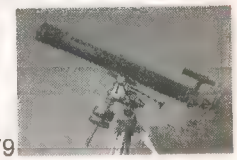

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(February 2002)

Continents, AF=Africa, **AN**=Antartica, **AS**=Asia, **EU**=Europe, **NA**=North America, **OC**=Oceania, **SA**=South America.
Zone Notes:
(A) 33,42,43,44. **(B)** 67,69-74 **(C)** 12,13,29,30,32,38,39. **(D)** 12,13,15. **(E)** 19,20,29,30. **(F)** 20-26,30-35,75.
(G) 16,17,18,18,23. **H)** 2,3,4,9,75. **(I)** 55,58,59.

Approved Countries			Zone			
No.	Prefix	Entity	Cont	ITU	CQ	Buro
1		Spratly Islands	AS	50	26	No
2	1A0	Sov. Mil. Order of Malta	EU	28	15	No
3	3A	Monaco	EU	27	14	Yes
4	3B6,3B7	Agalega & St. Brandon Is.	AF	53	39	Yes
5	3B8	Mauritius	AF	53	39	Yes
6	3B9	Rodrigues Island	AF	53	39	No
7	3C	Equatorial Guinea	AF	47	36	No
8	3C0	Annobon Island	AF	52	36	No
9	3D2	Fiji	OC	56	32	Yes
10	3D2	Conway Reef	OC	56	32	No
11	3D2	Rotuma Island	OC	56	32	No
12	3DA	Swaziland	AF	57	38	Yes
13	3V	Tunisia	AF	37	33	No
14	3W, XV	Vietnam	AS	49	26	No
15	3X	Guinea	AF	46	35	No
16	3Y	Bouvet Island	AF	67	38	No
17	3Y	Peter I. Island	AN	72	12	No
18	4J,4K	Azerbaijan	AS	29	21	No
19	4L	Georgia	AS	29	21	No
20	4P-4S	Sri Lanka	AS	41	42	No
21	4U_ITU	ITU HQ	EU	28	14	Yes
22	4U_UN	United Nations HQ	NA	08	05	Yes
23	4W	U.N. (admin) East Timor	OC	54	28	No
24	4X,4Z	Israel	AS	39	20	Yes
25	5A	Libya	AF	38	34	No
26	5B	Cyprus	AS	39	20	Yes
27	5H-5I	Tanzania	AF	53	37	No
28	5N-5O	Nigeria	AF	46	35	Yes
29	5R-5S	Madagascar	AF	53	39	No
30	5T	Mauritania	AF	46	35	No
31	5U	Niger	AF	46	35	No
32	5V	Togo	AF	46	35	No
33	5W	Samoa	OC	62	32	Yes
34	5X	Uganda	AF	48	37	Yes
35	5Y-5Z	Kenya	AF	48	37	Yes
36	6V-6W	Senegal	AF	46	35	Yes
37	6Y	Jamaica	NA	11	08	Yes
38	7O	Yemen	AS	39	21,37	No
39	7P	Lesotho	AF	57	38	No
40	7Q	Malawi	AF	53	37	No
41	7T-7Y	Algeria	AF	37	33	Yes
42	8P	Barbados	NA	11	08	Yes
43	8Q	Maldives	AS,AF	41	22	No
44	8R	Guyana	SA	12	09	Yes
45	9A	Croatia	EU	28	15	Yes
46	9G	Ghana	AF	46	35	Yes
47	9H	Malta	EU	28	15	Yes
48	9I-9J	Zambia	AF	53	36	Yes
49	9K	Kuwait	AS	39	21	Yes
50	9L	Sierra Leone	AF	46	35	Yes
51	9M2-9M4	West Malaysia	AS	54	28	Yes
52	9M6-9M8	East Malaysia	OC	54	28	No
53	9N	Nepal	AS	42	22	No
54	9Q-9T	Dem. Rep. of Congo	AF	52	36	No
55	9U	Burundi	AF	52	36	No
56	9V	Singapore	AS	54	28	Yes
57	9X	Rwanda	AF	52	36	No
58	9Y-9Z	Trinidad & Tobago	SA	11	09	Yes
59	A2	Botswana	AF	57	38	Yes
60	A3	Tonga	OC	62	32	No
61	A4	Oman	AS	39	21	Yes
62	A5	Bhutan	AS	41	22	No
63	A6	United Arab Emirates	AS	39	21	No
64	A7	Qatar	AS	39	21	Yes
65	A9	Bahrain	AS	39	21	Yes
66	AP-AS	Pakistan	AS	41	21	Yes
67	BS7	Scarborough Reef	AS	50	27	No
68	BV	Taiwan	AS	44	24	Yes
69	BV9P	Pratas Island	AS	44	24	No
70	BY, BT	China	AS	(A)	23,24	Yes
71	C2	Nauru	OC	65	31	No
72	C3	Andorra	EU	27	14	Yes
73	C5	The Gambia	AF	46	35	Yes
74	C6	Bahamas	NA	11	08	Yes
75	C8-9	Mozambique	AF	53	37	Yes
76	CA-CE	Chile	SA	14,16	12	Yes
77	CE0	Easter Island	SA	63	12	No
78	CE0	Juan Fernandez Island	SA	14	12	No
79	CE0	San Felix & San Ambrosio	SA	14	12	No
80	CE9,KC4	Antarctica	AN	(B)	(C)	No
81	CM, CO	Cuba	NA	11	08	Yes
82	CN	Morocco	AF	37	33	Yes
83	CP	Bolivia	SA	12,14	10	Yes
84	CT	Portugal	EU	37	14	Yes
85	CT3	Madeira Island	AF	36	33	No
86	CU	Azores	EU	36	14	No
87	CV-CX	Uruguay	SA	14	13	Yes
88	CY0	Sable Island	NA	09	05	No
89	CY9	St. Paul Island	NA	09	05	No
90	D2-3	Angola	AF	52	36	No
91	D4	Cape Verde	AF	46	35	No
92	D6	Comoros	AF	53	39	No
93	DA-DL	Fed. Rep. of Germany	EU	28	14	Yes
94	DU-DZ	Philippines	OC	50	27	Yes
95	E3	Eritrea	AF	48	37	No
96	E4	Palestine	AS	39	20	No
97	EA-EH	Spain	EU	37	14	Yes
98	EA6-EH6	Balearic Island	EU	37	14	No
99	EA8-EH8	Canary Island	AF	36	33	No
100	EA9-EH9	Ceuta & Melilla	AF	37	33	No
101	EI-EJ	Ireland	EU	27	14	Yes
102	EK	Armenia	AS	29	21	Yes
103	EL	Liberia	AF	46	35	No
104	EP-EQ	Iran	AS	40	21	No
105	ER	Moldovia	EU	29	16	Yes
106	ES	Estonia	EU	29	15	Yes
107	ET	Ethiopia	AF	48	37	Yes
108	EU,EV,EW	Belarus	EU	29	16	Yes
109	EX	Kyrgyzstan	AS	30,31	17	Yes
110	EY	Tajikistan	AS	30	17	Yes
111	EZ	Turkmenistan	AS	30	17	Yes
112	F	France	EU	27	14	Yes
113	FG	Guadeloupe	NA	11	08	No
114	FJ,FS	Saint Martin	NA	11	08	No
115	FH	Mayotte	AF	53	39	No
116	FK	New Caledonia	OC	56	32	Yes
117	FK/C	Chesterfield Island	OC	56	30	No
118	FM	Martinique	NA	11	08	No
119	FO	Austral Island	OC	63	32	No
120	FO	Clipperton Island	NA	10	07	No
121	FO	French Polynesia	OC	63	32	Yes
122	FO	Marquesas Island	OC	63	31	No
123	FP	St. Pierre & Miquelon	NA	09	05	No
124	FR/G	Glorioso Island	AF	53	39	No
125	FR/J,E	Juan de Nova, Europa	AF	53	39	No
126	FR	Reunion Island	AF	53	39	No
127	FR/T	Tromelin Island	AF	53	39	No
128	FT5W	Crozet Island	AF	68	39	No

129	FT5X	Kerguelen Island	AF	68	39	No
130	FT5Z	Amsterdam & St. Paul Is.	AF	68	39	No
131	FW	Wallis & Futuna Island	OC	62	32	No
132	FY	French Guiana	SA	12	09	No
133	G,GX	England	EU	27	14	Yes
134	GD,GT	Isle of Man	EU	27	14	Yes
135	GI,GN	Northern Ireland	EU	27	14	Yes
136	GJ,GH	Jersey	EU	27	14	Yes
137	GM,GS	Scotland	EU	27	14	Yes
138	GU,GP	Guernsey	EU	27	14	Yes
139	GW,GC	Wales	EU	27	14	Yes
140	H4	Solomon Islands	OC	51	28	Yes
141	H40	Temotu Province	OC	51	32	No
142	HA,HG	Hungary	EU	28	15	Yes
143	HB	Switzerland	EU	28	14	Yes
144	HB0	Liechtenstein	EU	28	14	Yes
145	HC-HD	Ecuador	SA	12	10	Yes
146	HC8-HD8	Galapagos Island	SA	12	10	No
147	HH	Haiti	NA	11	08	Yes
148	HI	Dominican Republic	NA	11	08	Yes
149	HJ-HK	Colombia	SA	12	09	Yes
150	HK0	Malpelo Island	SA	12	09	No
151	HK0	San Andres & Providencia	NA	11	07	No
152	HL	Republic of Korea	AS	44	25	Yes
153	HO-HP	Panama	NA	11	07	Yes
154	HQ-HR	Honduras	NA	11	07	Yes
155	HS-E2	Thailand	AS	49	26	Yes
156	HV	Vatican	EU	28	15	No
157	HZ	Saudi Arabia	AS	39	21	No
158	I	Italy	EU	28	15,33	Yes
159	IS0,IM0	Sardinia	EU	28	15	No
160	J2	Djibouti	AF	48	37	Yes
161	J3	Grenada	NA	11	08	Yes
162	J5	Guinea-Bissau	AF	46	35	No
163	J6	St. Lucia	NA	11	08	No
164	J7	Dominica	NA	11	08	Yes
165	J8	St. Vincent	NA	11	08	No
166	JA-JS	Japan	AS	45	25	Yes
167	JD1	Minami Torishima	OC	90	27	No
168	JD1	Ogasawara	AS	45	27	No
169	JT-JV	Mongolia	AS	32,33	23	Yes
170	JW	Svalbard	EU	18	40	No
171	JX	Jan Mayen	EU	18	40	No
172	JY	Jordan	AS	39	20	Yes
173	K,W,N, AA-AK	United States of America	NA	6,7,8	3,4,5	Yes
174	KG4	Guantanamo Bay	NA	11	08	No
175	KH0	Mariana Island	OC	64	27	No
176	KH1	Baker & Howland Island	OC	61	31	No
177	KH2	Guam	OC	64	27	Yes
178	KH3	Johnston Island	OC	61	31	Yes
179	KH4	Midway Island	OC	61	31	No
180	KH5	Palmyra & Jarvis Island	OC	61,62	31	No
181	KH5K	Kingman Reef	OC	61	31	No
182	KH6,7	Hawaii	OC	61	31	Yes
183	KH7K	Kure Island	OC	61	31	No
184	KH8	American Samoa	OC	62	32	No
185	KH9	Wake Island	OC	65	31	No
186	KL7	Alaska	NA	1,2	1	Yes
187	KP1	Navassa Island	NA	11	08	No
188	KP2	Virgin Island	NA	11	08	Yes
189	KP3,4	Puerto Rico	NA	11	08	Yes
190	KP5	Desecheo Island	NA	11	08	No
191	LA-LN	Norway	EU	18	14	Yes
192	LO-LW	Argentina	SA	14,16	13	Yes
193	LX	Luxembourg	EU	27	14	Yes
194	LY	Lithuania	EU	29	15	Yes
195	LZ	Bulgaria	EU	28	20	Yes
196	OA-OC	Peru	SA	12	10	Yes
197	OD	Lebanon	AS	39	20	Yes
198	OE	Austria	EU	28	15	Yes
199	OF-OI	Finland	EU	18	15	Yes
200	OH0	Aland Island	EU	18	15	No
201	OJ0,OH0M	Market Reef	EU	18	15	No
202	OK-OL	Czech Republic	EU	28	15	Yes
203	OM	Slovak Republic	EU	28	15	Yes
204	ON-OT	Belgium	EU	27	14	Yes
205	OX	Greenland	NA	5,75	40	No
206	OY	Faroe Islands	EU	18	14	Yes
207	OZ	Denmark	EU	18	14	Yes
208	P2	Papua New Guinea	OC	51	28	Yes
209	P4	Aruba	SA	11	09	Yes
210	P5	Dem. People's Rep. Korea	AS	44	25	No
211	PA-PI	Netherlands	EU	27	14	Yes
212	PJ2,4,9	Bonaire, Curacao Netherlands Antilles	SA	11	09	Yes
213	PJ5-8	St. Maarten, Saba, St. Eustatius	NA	11	08	Yes
214	PP-PY	Brazil	SA	(D)	11	Yes
215	PP0-PY0F	Fernando de Noronha	SA	13	11	No
216	PP0-PY0S	St. Peter & St. Paul Rocks	SA	13	11	No
217	PP0-PY0T	Trindade & Martim Vaz Is.	SA	15	11	No
218	PZ	Suriname	SA	12	09	Yes
219	R1FJ	Franz Josef Land	EU	75	40	No
220	R1MV	Malyj Vysotskij Island	EU	29	16	No
221	S0	Western Sahara	AF	46	33	No
222	S2	Bangladesh	AS	41	22	Yes
223	S5	Slovenia	EU	28	15	Yes
224	S7	Seychelles	AF	53	39	No
225	S9	Sao Tome & Principe	AF	47	36	No
226	SA-SM	Sweden	EU	18	14	Yes
227	SN-SR	Poland	EU	28	15	Yes
228	ST	Sudan	AF	47,48	34	Yes
229	SU	Egypt	AF	38	34	No
230	SV-SZ	Greece	EU	28	20	Yes
231	SV/A	Mount Athos	EU	28	20	No
232	SV5	Dodecanese	EU	28	20	No
233	SV9	Crete	EU	28	20	No
234	T2	Tuvalu	OC	65	31	No
235	T30	West Kiribati (Gilbert Is.)	OC	65	31	No
236	T31	Central Kiribati (British Phoenix Island)	OC	62	31	No
237	T32	East Kiribati (Line Is.)	OC	61,63	31	No
238	T33	Banaba Is. (Ocean Is.)	OC	65	31	No
239	T5	Somalia	AF	48	37	No
240	T7	San Marino	EU	28	15	Yes
241	T8,KC6	Palau	OC	64	27	No
242	T9	Bosnia-Herzegovina	EU	28	15	Yes
243	TA-TC	Turkey	EU,AS	39	20	Yes
244	TF	Iceland	EU	17	40	Yes
245	TG, TD	Guatemala	NA	11	07	Yes
246	TI, TE	Costa Rica	NA	11	07	Yes
247	TI9	Cocos Island	NA	11	07	No
248	TJ	Cameroon	AF	47	36	No
249	TK	Corsica	EU	28	15	No
250	TL	Central Africa	AF	47	36	No
251	TN	Congo (Republic of)	AF	52	36	No
252	TR	Gabon	AF	52	36	Yes
253	TT	Chad	AF	47	36	No
254	TU	Cote d'Ivoire	AF	46	35	Yes
255	TY	Benin	AF	46	35	No
256	TZ	Mali	AF	46	35	Yes
257	UA-UI1,3, 4,6. RA-RZ	European Russia	EU	(E)	16	Yes
258	UA2	Kaliningrad	EU	29	15	No
259	UA-UI8,9,0 RA-RZ	Asiatic Russia	AS	(F)	(G)	Yes
260	UJ-UM	Uzbekistan	AS	30	17	Yes
261	UN-UQ	Kazakhstan	AS	29-31	17	Yes
262	UR-UZ EM-EO	Ukraine	EU	29	16	No
263	V2	Antigua & Barbuda	NA	11	08	Yes
264	V3	Belize	NA	11	07	Yes
265	V4	St. Kitts & Nevis	NA	11	08	No
266	V5	Namibia	AF	57	38	Yes
267	V6	Micronesia	OC	65	27	No
268	V7	Marshall Island	OC	65	31	Yes
269	V8	Brunei	OC	54	28	Yes
270	VE,VO,VY	Canada	NA	(H)	01-05	Yes
271	VK	Australia	OC	(I)	29,30	Yes
272	VK0	Heard Island	AF	68	39	No
273	VK0	Macquarie Island	OC	60	30	No
274	VK9C	Cocos-Keeling Island	OC	54	29	No
275	VK9L	Lord Howe Island	OC	60	30	No
276	VK9M	Mellish Reef	OC	56	30	No
277	VK9N	Norfolk Island	OC	60	32	No
278	VK9W	Willis Island	OC	55	30	No
279	VK9X	Christmas Island	OC	54	29	No

280	VP2E	Anguilla	OC	11	08	No
281	VP2M	Montserrat	NA	11	08	No
282	VP2V	British Virgin Island	NA	11	08	Yes
283	VP5	Turks & Caicos Island	NA	11	08	Yes
284	VP6	Pitcairn Island	OC	63	32	No
285	VP6	Ducie Island	OC	63	32	No
286	VP8	Falkland Island	SA	16	13	Yes
287	VP8, LU	South Georgia Island	SA	73	13	No
288	VP8, LU	South Orkney Island	SA	73	13	No
289	VP8, LU	South Sandwich Island	SA	73	13	No
290	VP8,LU,CE9 HF0, 4K1	South Shetland Island	SA	73	13	No
291	VP9	Bermuda	NA	11	05	Yes
292	VQ9	Chagos Island	AF	41	39	Yes
293	VR	Hong Kong	AS	44	24	Yes
294	VU	India	AS	41	22	Yes
295	VU	Andaman & Nicobar Island	AS	49	26	No
296	VU	Lakshadweep Island	AS	41	22	No
297	XA-XI	Mexico	NA	10	06	Yes
298	XA4-XI4	Revilla Gigedo	NA	10	06	No
299	XT	Burkina Faso	AF	46	35	Yes
300	XU	Cambodia	AS	49	26	No
301	XW	Laos	AS	49	26	No
302	XX9	Macao	AS	44	24	No
303	XY-XZ	Myanmar	AS	49	26	No
304	YA	Afghanistan	AS	40	21	No
305	YB-YH	Indonesia	OC	51,54	28	Yes
306	YI	Iraq	AS	39	21	Yes
307	YJ	Vanuatu	OC	56	32	Yes
308	YK	Syria	AS	39	20	Yes
309	YL	Latvia	EU	29	15	Yes
310	YN	Nicaragua	NA	11	07	Yes
311	YO-YR	Romania	EU	28	20	Yes
312	YS	El Salvador	NA	11	07	Yes
313	YT-YU,YZ	Yugoslavia	EU	28	15	Yes
314	YV-YY	Venezuela	SA	12	09	Yes
315	YV0	Aves Island	NA	11	08	No
316	Z2	Zimbabwe	AF	53	38	No
317	Z3	Macedonia	EU	28	15	Yes
318	ZA	Albania	EU	28	15	Yes
319	ZB2	Gibraltar	EU	37	14	Yes
320	ZC4	UK Sov Base Areas on Cyprus	AS	39	20	Yes
321	ZD7	St. Helena	AF	66	36	No
322	ZD8	Ascension Island	AF	66	36	Yes
323	ZD9	Tristan da Cunha & Gough Is.	AF	66	38	No
324	ZF	Cayman Island	NA	11	08	Yes
325	ZK1	North Cook Islands	OC	62	32	No
326	ZK1	South Cook Islands	OC	62	32	No
327	ZK2	Niue	OC	62	32	No
328	ZK3	Tokelau Island	OC	62	31	No
329	ZL-ZM	New Zealand	OC	60	32	Yes
330	ZL7	Chatham Island	OC	60	32	No
331	ZL8	Kermadec Island	OC	60	32	No
332	ZL9	Auckland & Campbell Is.	OC	60	32	No
333	ZP	Paraguay	SA	14	11	Yes
334	ZR-ZU	South Africa	AF	57	38	Yes
335	ZS8	Prince Edward & Marion Is.	AF	57	38	No

Deleted Countries

1	Blenheim Reef		AF	41	39	No
2	Geyser Reef		AF	53	39	No
3	Abu Ail Island		AS	39	21	No
4	1M	Minerva Reef	OC	62	32	No
5	4W	Yemen Arab Republic	AS	39	21	No
6	7J1	Okino Tori-shima	AS	45	27	No
7	8Z4	Saudi Arabia/Iraq (N-Zone)	AS	39	21	No
8	8Z5, 9K3	Kuwait/Saudi Arabia (N-Zone)	AS	39	21	No
9	9S4	Saar	EU	28	14	No
10	9U5	Ruanda-Urundi	AF	52	36	No
11	AC3	Sikkim	AS	41	22	No
12	AC4	Tibet	AS	41	23	No
13	C9	Manchuria	AS	33	24	No
14	CN2	Tangier	AF	37	33	No
15	CR8	Damao, Diu	AS	41	22	No
16	CR8	Goa	AS	41	22	No
17	CR8,CR10	Portuguese Timor	OC	54	28	No
18	DA-DM	Germany	EU	28	14	No
19	DM,Y2-9	German Dem. Rep.	EU	28	14	No
20	EA9	Ifni	AF	37	33	No
21	FF	French West Africa	AF	46	35	No
22	FH,FB8	Comoros	AF	53	39	No
23	FI8	French Indo-China	AS	49	26	No
24	FN8	French India	AS	41	22	No
25	FQ8	French. Equatorial Africa	AF	47,52	36	No
26	HK0	Bajo Nuevo	NA	11	08	No
27	HK0, KP3, KS4	Serrana Bank & Roncador Cay	NA	11	07	No
28	I1	Trieste	EU	28	15	No
29	I5	Italian Somaliland	AF	48	37	No
30	JZ0	Netherlands New Guinea	OC	51	28	No
31	KR6, KR8, JR6, KA6	Okinawa (Ryukyu Island)	AS	45	25	No
32	KS4	Swan Island	NA	11	07	No
33	KZ5	Canal Zone	NA	11	07	No
34	OK-OM	Czechoslovakia	EU	28	15	No
35	P2, VK9	Papua Territory	OC	51	28	No
36	P2, VK9	Territory New Guinea	OC	51	28	No
37	PK1-3	Java	OC	54	28	No
38	PK4	Sumatra	OC	54	28	No
39	PK5	Netherlands Borneo	OC	54	28	No
40	PK6	Celebe & Molucca Is.	OC	54	28	No
41	ST0	Southern Sudan	AF	47,48	34	No
42	UN1	Karelo-Finnish Republic	EU	19	16	No
43	VO	Newfoundland,Labrador	NA	9	02,05	No
44	VQ1, 5H1	Zanzibar	AF	53	37	No
45	VQ6	British Somaliland	AF	48	37	No
46	VQ9	Aldabra	AF	53	39	No
47	VQ9	Desroches	AF	53	39	No
48	VQ9	Farquhar	AF	53	39	No
49	VS2, 9M2	Malaya	AS	54	28	No
50	VS4	Sarawak	OC	54	28	No
51	VS9A,P,S	People's Dem. Rep. of Yemen	AS	39	21	No
52	VS9H	Kuria Muria Island	AS	39	21	No
53	VS9K	Kamaran Island	AS	39	21	No
54	ZC5	British North Borneo	OC	54	28	No
55	ZC6, 4X1	Palestine	AS	39	20	No
56	ZD4	Gold Coast, Togoland	AF	46	35	No
57	ZS0,1	Penguin Island	AF	57	38	No
58	ZS9	Walvis Bay	AF	57	38	No

Notes:

1 DXCC Approved Country total is **335** and **58** Deleted countries.

2 **VP6 Ducie Island** added-Only contacts made 16th. November 2001 and after count, this was officially added to the list 1st June 2002.

3 ***DXCC Accepting P5/4L4FN Contacts***

Since early November 2001, Mr. Edisher (Ed) Giorgadze, 4L4FN, a Georgian citizen employed by the United Nations World Food Program, has been active as **P5/4L4FN** in Pyongyang, DPRK.

DXCC Rule 7 states "Any Amateur Radio operation should take place only with the complete approval and understanding of appropriate administration officials." The rule continues, "In any case, credit will be given for contacts where adequate evidence of authorization by appropriate authorities exists.

The ARRL has now received adequate evidence that the operation by Mr. Giorgadze is being conducted with the knowledge and approval of telecommunications officials in Pyongyang. At the present time, this approval is limited to SSB operation.

The ARRL Awards Committee has met and concurred that the operation should be accredited. As a result, we are pleased to apply that effective immediately, the DXCC Branch will accept SSB contacts with P5/4L4FN for DXCC credit.

Contacts with P5/4L4FN dating back to early November, 2001 will count for this Entity.

4 ***Typical prefixes used in Antarctica:***

3Y0, 3Y1, 3Y2, 3Y5, 4K1, 7S8, 8J1, AT0, AT3, AX0, AZ5, BY, CE9, DP0, DP1, EA0, ED0, EG0, EH0, EM1, FB8, FT4, FT5, FT8, G, HF0, HL5, HP, IA0, KC4, LA, LU1(Z), LZ0, OR4, OR5, PY, R1AN, UA, VK0, VI0, VP8, VU2, Y88, Y90, ZL0, ZL5, ZS1, ZS7, ZX0.

ALARA

Christine Taylor VK5CTY
vk5cty@vk5tty or geencee@oicknowl.com.au

Annual General Meeting

It was our AGM on Monday May 6th, held on air, as usual, and as successful as usual. There were 19 YLs on and conditions were kind for a change so we all could hear most others.

The committee, as nominated was elected, so the office holders are:-

Executive

President	Bev Clayton	VK4NBC
Snr. Vice President	Robyn Gladwin	VK3WX
Jnr. Vice President	Susan Brain	VK7LUV
Secretary	Margaret Scherwin	VK4A0E
Treasurer	Bev Clayton	VK4NBC
Souvenir Custodian	Gwen Tilson	VK3DYL
Minute Secretary	Bron Brown	VK3DYF
Publicity Officer	Christine Taylor	VK3CTY
Editor	Dorothy Bishop	VK2DB

Office Bearers State Representatives

Awards Custodian	Jean Shaw	VK1/2
	Dorothy Bishop	VK2DB
Contest Manager	Marilyn Syme	VK3DMS
	VK3, Judy Atkins	VK3AGC
Sponsorship Sect'y	Maria MeLeod	VK5BMT
	VK4, Margaret Schwerin	VK4A0E
Librarian	Kim Wilson	VK3CYL
	VK5/8, Jean Kopp	VK5TSX
Historian	Tina Clogg	VK5TMC
	VK6, Poppy Bradshaw	VK6YF

After the official meeting was over a general meeting was held and news, weather reports and views exchanged around the country.

A very enjoyable trip to Melbourne

In time for the April ALARA luncheon in Melbourne, I had a visit with my family. As it was school holiday time I suggested my daughter and daughter-in-law would like to join us with their children, which the regular lunchers were kind enough to allow.

The children (and mothers) did not stay all the time, they went riding on trams instead, but when the children were at the table they made me feel proud of them.

The table would have been crowded without the extras I brought along, with Mavis VK3KS, Bron VK3DYF, Jessie VK3VAN, Gwen VK3DYL, Marlene VK3WQ and Jean Shaw. As the photo shows we enjoyed ourselves.

ALARAMEET 2002
http://alarameet2002.8m.com/

Congratulations

Gwen VK3DYL jumped for joy when she heard that the current P5 operator, Ed who is working in North Korea for a spell, has received written permission to operate, such permission being accepted by ARRL. She IMMEDIATELY checked Ed's Log on the Net to confirm she was definitely in it.

When Gwen receives Ed's card, plus the one for the new entity Ducie Island, which has recently been activated - she will have WORKED THEM ALL. Er well until someone discovers another scrap of land/reef, or whatever, (big enough for a small tent and an antenna pole) which can be declared a NEW country/entity.

ALARA's congratulations to you Gwen. All the other keen Dxers will be joining in Gwen's dance for joy. It is always good news when another country is acknowledged by ARRL.

Field days are here again

Dot VK2DB 'manned' the ALARA table at the Gosford Field Day on Feb 24th assisted by Nancy, who was knitting a very fancy jacket. Every lady who came to the table was interested to see it. YL visitors were June VK4SJ, Agnes VK2GWI, Karen VK2YKB, Val VK4VR, Anne VK4ANN, Linden VK1LSO, and a few ladies without calisigns.

Dot herself knitted really tiny bootees for a premature baby when she had time. She also bought the WIA Searchable 2002 Callbook on CD.

Judy VK3AGC was delighted to be able to spend the whole day at the Bendigo Hamfest when her sister offered to come and look after their mother for the day. She said she didn't buy anything but was pleased to meet so many people she knew in the radio world. There were several other YLs present but no members of ALARA.

APRS Symposium

(as passed on to this reporter)

Recently VK3 held a symposium, on APRS - Automatic Position Recording System. This system requires a special knowledge and quite a crowd were expected.

The sons of VK3DYL and VK3DYF were involved and "invited" their mothers to provide a barbecue lunch for 60 people, this involved cutting up 100s of onions, tomatoes, buttering NUMEROUS loaves of bread, and preparing associated sundry titbits.

0Ms seem to require endless cups of coffee/tea to keep them going during the day, and since the YLs were disinclined to keep washing cups. foam insulated cups were provided, and the kettle was kept boiling.

Gwen and Bron did not understand what the talk was all about, but the day was noted very successful. When the YLs were asked about doing it again the reply was "Not Pygmalion Likely"

That DXpedition later this year

The latest message from Gwen tells me they have started notifying the DX world that the second destination will be Nauru (the first one will be to Lord Howe Island as previously announced), provided the one and only plane in the Air Nauru "fleet" is still flying

They had decided to keep the destination to themselves until accommodation and other plans had been sorted out. It is pretty certain that they will be able to use the callsign C21YL but won't know for sure until they get to the island.

Operating dates should be from 1st - 15th October. The operators will be Elizabeth VE7YL (CW), June VK4SJ, Mio JR3MVF and Gwen VK3DYL., all ALARA members by the way!

QSL for operations and for the Lord Howe Island dxpedtition will both be through Gwen VK3DYL as it was for the expedition two years ago. Why not participate and make Gwen as busy as she was the last time.

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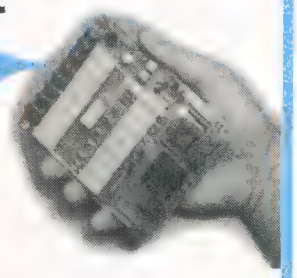

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* Note these kits are supplied at board level only. Other kits are complete with enclosure

All kits include easy to follow step by step assembly instructions. You supply the soldering iron and basic tools.
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Women In Radio

Two women involved with radio in two different ways

Jean Hillier

Jean is one of those people who "did not exist" during WW2, who were not awarded medals or given any glory, but who played a very vital part in our success in the War in the Pacific in particular.

Sixty years ago Jean was cycling from Mundulla to Bordertown to learn Morse Code from the local Postmaster. She was also using her Morse skills, operating the telephone switchboard at the general store/post office, to connect subscribers to the party lines.

With as much impact and shock as the attack on the twin towers on September 11, came the bombing of Darwin on 19th February 1942. The attack and the knowledge that at least one local Mundulla boy had been killed in the attack, fuelled Jean's ambition to use her Morse in the service of Australia.

As soon as that coupon "inviting interested females to fill in a form with a view to being enlisted in the Australian Armed Forces" appeared in the paper, Jean enrolled. Her special skills were immediately of importance. Jean joined the Australian Special Wireless Group, at a camp near Bonegilla in Queensland where she was set to learn the 70 Japanese Kana Morse characters.

Jean hated Kana and still does but it gave her the chance to help defeat Australian enemies. Some of the work Jean and others did is still classified but they are now allowed to share with us some of their experiences. Some of the messages Jean intercepted dealt directly with the bombing raids on Darwin. It must have been very satisfying to know that you have caused some raids to be aborted and others to be made with many fewer aircraft, just because you had been able to 'listen in' to the radio talk leading to the build up of the bombing force so our fighters were able to intercept some of the planes before they had a chance to drop their bombs on Darwin.

One of the first interceptions Jean made was from a dugout just a mile from an Australian position. When the station went off the air a few days later Jean knew that she had been instrumental in the destruction of that particular outpost of the Japanese war effort.

Photo first published in Border Chronicle on 21/2/02. Used by permission

In 1943 Admiral Yamamoto was shot down as a direct result of Jean's unit's interception of messages detailing his movements. The bombing of Timor airstrips when they were packed with Japanese aircraft came about because the advance warning gained through decoding of messages between the Japanese units. Even a weather report could be useful.

Jean has written a book about her experiences called, "No Medals in this Unit" but the book could not be published until over 40 years after the events because of the extreme secrecy of the activities. Some parts of the story are still classified and may always be so.

Jean still listens to Morse around the world on an old wartime Kingsley AR7 which will be recognised by a number of amateurs reading this article. It was a robust, reliable receiver, of Australian design and construction which could be carried from place to place over all types of terrain. And it still works.

There are not many Morse signals around now, and most of those remaining are in French, but Jean loves to hear them all. She has kept up her listening speed for over 40 years.

Sue Mahoney

Sue has no licence but has been a member of ALARA for many years. Her OM is Steve VK5AIM, well known over many years on the HF bands and for his contributions to AR and other amateur radio magazines. He is one of the old school, an experimenter.

In a recent issue of AR there was a description of one of the several portable radio rigs Steve has built and used over the years. These portable rigs allow both Sue and Steve to "do their own thing" and to do it together.

Some years ago Sue became a "genie", she started researching her own, but more particularly, Steve's family tree largely through the material available through the Genealogical Society of South Australia.

Steve found many many relatives he didn't know he had. A few were still living but most of them were under a tombstone somewhere. So Sue decided to find these tombs and photograph the stones to complete the record.

She became aware of the importance, not just to know the words that are on

the tombstone, but to be able to see the stone for yourself. It was fine for Steve and Sue, most of the stones they were interested in were in South Australia, as they were, but often a visitor from interstate or overseas inquires about the cemetery records of their ancestors. How much nicer it would be if they could see the stone as well as read the inscription on a card in an index.

Now Sue has undertaken a project for the GSSA to record and photograph tombstones all over South Australia, particularly those lone graves, station graves and, where they can be found, the stones erected in memory of servicemen killed overseas but precious to their families here, and to future generations.

Sue has a digital camera for the photographs but there is more to the project than just taking a photo. The time of the day must be considered, East facing stones and West facing stones cannot both be 'snapped' at the same time, so there need to be lunch breaks while the sun moves. The inscriptions are often unreadable so care must be employed to clean without damaging the stone surface.

If there is moss in the engraving Steve is supplied with a toothbrush and a spray can of water to clean "Uncle Fred's" face a bit. Gold inlay will leach out over quite a short time, so if the stone is dark the inscription will become invisible. After cleaning with water ordinary chalk is used to fill the lettering. It does no harm but makes a considerable difference to the photograph.

There are other hazards around cemeteries. So far Sue has not fallen into a grave that has sunk over time but she has had her leg caught up to the ankle in a rabbit hole and had to be rescued by Steve. They have both been bombarded by Magpies and had bull ants run up their legs. So far they have not seen any snakes but they are watchful.

The advice if you wish to photograph tombstones is never to stand on the grave, not because you might be showing disrespect by doing so but to avoid falling into a hole. Instead you straddle the grave or set yourself alongside it where you can see the detail clearly.

Besides the lettering there are often interesting and even sad additions. A child may have a picture of a teddy bear engraved on the headstone, or perhaps a rattle for a baby or a fast car for a teenager. Sue has found cricket bats and netballs or footballs. A farmer may have a tractor cut into the stone, or maybe a head of wheat.

Some graves cause a lump in the throat, like that of five children buried together, or a tiny metre long grave for a baby, others bring a smile to the face. One grave had a wife with two husbands buried one on either side, another had a husband between his two wives. Sue and Steve have seen all of these.

On many of these expeditions Steve takes along a portable rig, then while Sue is copying the inscription or while they are waiting for the sun to move, Steve fires it up and put out a "CQ". Sometimes he "talks to the world" at other times the bands are dead, prompting the comment from Sue:

"Well what do you expect in a cemetery?"

Next time you hear Steve's call during the day, answer him and ask if he is in a cemetery. Help these two share each other's interest and play amateur radio at the same time.

AR

Club Notes

Adelaide Hills Amateur Radio Society

The May meeting was very well attended to hear Tony VK5ZAI talk about his experiences with space radio technologies.

Tony has become ever more deeply involved with space communication since he was able to assist Andy Thomas to talk to his parents on a regular basis while he was orbitting the world on MIR, several years ago.

Tony kept up his interest after Andy returned to earth and his contact with Andy as well. He has frequently spoken to the Russian astronauts on MIR before it was decommissioned, and to the various astronauts on the International Space Station.

More recently Tony was invited to the United States to watch a shuttle launch and to tour the Kennedy Space Centre as an honoured guest.

Since his return to VK5 he has arranged for a number of school children to speak to the astronauts on the ISS. He is one of only a handful of amateurs around the world to be capable of making this sort of communication possible and one of the few permitted to do so.

If you hear of a school undertaking such an exciting project you can be sure Tony will be the facilitator of the experience. Perhaps you know of a school or a teacher who would like to share in this enterprise, if so get in touch with Tony and maybe it will happen.

AR

International Lighthouse Weekend

August 17 and 18 (see How's DX column)

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3 ele 15m computer opt	$285
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United Kingdom

A press release issued by the Radiocommunications Agency details the qualifications and examinations for the revised licensing structure for amateur radio.

The first phase was the introduction of the Foundation Licence, a great success and since then over 1500 M3 Foundation Licences have been issued.

The press release states, "a new syllabus for the Intermediate licence will be introduced early in 2003. This will be based on the current (Novice) syllabus but will exclude those topics covered in the Foundation Licence".

Introduction of the Full licence syllabus is planned for early in 2004. From that date, entry into amateur radio will be exclusively via the Foundation Licence."

(gb2rs)

Digital voice

The ARRL Digital Voice Working Group (DVWG) held a Digital Voice Forum, at the Dayton Hamvention, Dayton, Ohio, May 19, 2002

This is stacking up to be the hottest new mode in Amateur Radio: Digital Voice.

The forum included presentations from world-renowned authorities on digital-audio hardware, software and other technical details.

Applications from rag-chewing to emergency communications to digital audio broadcasting were covered.

Members of the DVWG and some distinguished guests spoke on various topics to get you up to speed on this exciting technology, APC025.

APCO25 is a national standard for digital voice systems.

From France, Cedric Demeure, talked about digital audio, ham radio and broadcasting. Cedric is also part of a DVWG plan to conduct transatlantic tests of digital voice over Amateur Radio.

To find out more you can e-mail kf6dx@arrl.org

(QNEWS 13/4)

HF Digital Communications Course

In December 2000 the ARRL Certification and Continuing Education Program offered its first on-line class in Amateur Radio Communications. Last December 2001; the programme added its first technical segment, a class on Antenna Modeling.

In April this year the C-CE has introduced its newest on-line course – HF Digital Communications (EC-005). Students taking this course will learn how to configure a station for HF Digital systems including RTTY, PSK31, MFSK, Hellschreiber, PACTOR, Winlink, Clover and more.

The course lasts 8 weeks and for non-ARRL members a charge of US$90 is made.

For more information visit the C-CE web site http://www.arrl.org/cce/

(ARRL N/L 12/4)

http://www.wia.org.au
check out the WIA webpage today!

Smart Glass

Wet your whistle! Smart glass gets another schooner sooner.

The tedious business of trying to catch the waiter's eye for a refill may be over as a Japanese company has devised a high-tech glass that sends a signal to bar staff telling them instantly when you are ready for another drink.

iGlassware, invented by Mitsubishi, is inspired by the radio tags used to thwart shoplifters.

Each glass has a microchip and a thin radio-frequency coil in its base, and its sides are coated with a thin, transparent conductive film.

That makes the glass behave like a capacitor, as the level of drink falls, so does the insulation and this progressively raises the charge that goes through to the microchip in the glass's base.

When the microchip receives the "full" charge, that means the glass is empty, so it sends a top-up signal to the waiters' station via a small radio coil built into the table, using a frequency similar to those used by mobile phones.

Every glass has its own ID, and its charge is provided by a radio frequency signal also provided by the table coil.

A far cry from ye olde pub days in the UK when ceramic beer tankards had a whistle baked into their rim. When you needed a refill, you used the whistle to get some service!

Hence the saying... "wet your whistle".

(QNEWS20/4 sourced from vk2wi/jocks journal)

Remember Kon-Tiki

Noted Norwegian explorer and ethnologist Thor Heyerdahl died April 18. He was 87. In 1947, Amateur Radio played a critical role in the success and safety of Heyerdahl's 101-day Kon-Tiki raft expedition, which used the call sign LI2B on the amateur bands. Heyerdahl was attempting to prove that it was possible for South American tribes to have crossed the Pacific from east to west to settle the Polynesian islands. Two former World War II Norwegian underground radio operators, Kurt Haugland, LA3KY, and Torstein Raaby, operated LI2B aboard the Kon-Tiki using tube gear powered mostly by dry batteries. LI2B kept a schedule with W1AW and other US stations during the historic voyage.

(ARRL N/L 26/4)

Job applicant?

A smile to finish the column!

Back when the telegraph was the fastest method of long-distance communication, a young man applied for a job as a Morse code operator. Answering an ad in the newspaper, he went to the office address that was listed. When he arrived, he entered a large, busy office filled with noise and clatter, including the sound of the telegraph in the background. A sign on the receptionist's counter instructed job applicants to fill out a form and wait until they were summoned to enter the inner office. The young man filled out his form and sat down with the seven other applicants in the waiting area.

After a few minutes, the young man stood up, crossed the room to the door of the inner office, and walked right in. Naturally the other applicants perked up, wondering what was going on. They muttered among themselves that they hadn't heard any summons yet. They assumed that the young man who went into the office made a mistake and would be disqualified. Within a few minutes, however, the employer escorted the young man out of the office and said to the other applicants, "Gentlemen, thank you very much for coming, but the job has just been filled." The other applicants began grumbling to each other, and one spoke up saying, "Wait a minute, I don't understand. He was the last to come in, and we never even got a chance to be interviewed. Yet he got the job. That's not fair!" The employer said, "I'm sorry, but the last several minutes while you've been sitting here, the telegraph has been ticking out the following message in Morse Code: 'If you understand this message, then come right in. The job is yours." None of you heard it or understood it. This young man did. The job is his.

(QNEWS 4/5 Haaken, LC8UBT via VK4WIE)

U.S.A. Statistics

For the first time ever, the population of Amateur Extra class operators topped 100,000 licensees.

According to figures available from the FCC Amateur Radio Statistics Web site <http://ah0a.org/FCC/index.html> compiled by Joe Speroni, AH0A, there were 100,153 Extra; 85,690 Advanced; 138,980 General; 319,768 Technician (including Tech Plus); and 38,574 Novice licensees. As of the end of April, there were 683,165 total Amateur Service licensees in the FCC database. According to Speroni's statistics, 1888 new licensees came aboard during April 2002—1800 of them as Technicians.

(ARRL N/L 4/5)

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edarmag@chariot.net.au

Technical Abstracts

Gil Sones VK3AUI
30 Moore Street, Box Hill South, Vic 3128

Permeability Tuning For Simple AM Radios

A novel adjustment method for a permeabiliy tuner was described in Rad Com March 2002 in the Down to Earth column by Don Breen G0FQI. The idea was to use a lipstick container as the screw driven linear adjustment for a variable inductor tuning a simple receiver. A container used for lip salve was used as these are plainer and cheaper and less likely to contain decorative metal parts.

The container used was a "Nivea Lip Care" container which provided both the linear adjuster and the coil former. Similar containers are available locally. The brand is not critical. The construction of the cosmetic holder is shown in Fig 1. A piece of ferrite rod is inserted in place of the lipstick and can be moved using the mechanism. A 35 mm long piece of ferrite rod 9 mm in diameter has tape wound around the end and is inserted in place of the lipstick.

The coil was wound on a former made from the cap of the lipstick. This was 48 mm long and 19 mm in diameter. The top of the cap was cut off. This needs to be done with care as the plastic can split.

A basic crystal set circuit is given in Fig 2. Resistor R1 is 100 kohm and provides a DC return in case a crystal earpiece is used. Diode D1 should be a Germanium type. The values of C1 and L1 are given in Table 1. These are starting values and may need adjustment to suit the components you use. L2 is 4 to 6 turns wound over the earthy end of L1. The wire used was 0.56 mm or 24 SWG but a smaller diameter may be needed for coils with more turns so that they fit on the former.

Table 1. Tuned Circuit Details.

Turns	SWG	Capacitor C1 pF	MHz Min	MHz Max
80	30	47	1.09	1.96
80	30	100	0.86	1.52
80	30	220	0.63	1.10
80	30	470	0.45	0.76
50	24	47	1.86	3.30
50	24	100	1.48	2.60
50	24	220	1.08	1.87
50	24	470	0.79	1.30
30	24	47	2.81	5.28
30	24	100	2.22	4.07
30	24	220	1.65	2.94
30	24	470	1.20	2.12

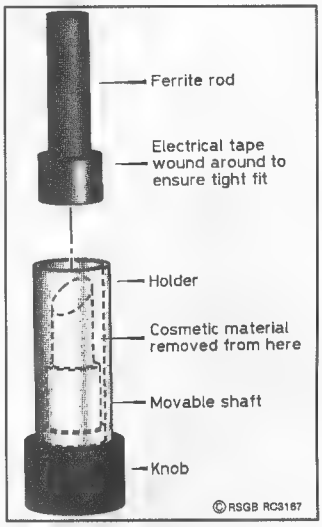

Fig 1. Cutaway View of Lipstick Container.

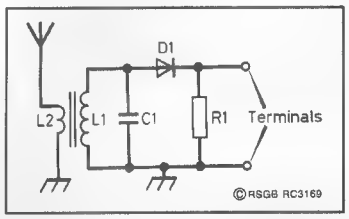

Fig 2. Basic Crystal Set

Digital pF Meter

In the Technical Topics column of Pat Hawker G3VA in Rad Com December 2001 a simple pF meter circuit was given by Brian Horsfall G3GKG. The circuit uses a freqency/period counter as the indicator. The counter is set to measure period and 1 microsecond is equivalent to 1 pF. The circuit should be used over an earthed metal tray when measuring a few thousand pF and above to avoid jittery reading.

The circuit is given in Fig 3. and uses just one integrated circuit. The battery is the common small 9 volt type which is known locally as a type 216. Capacity around the "unknown" part of the circuit should be kept to a minimum. The capacitor C0 is a gimmick capacitor which is just a couple of short

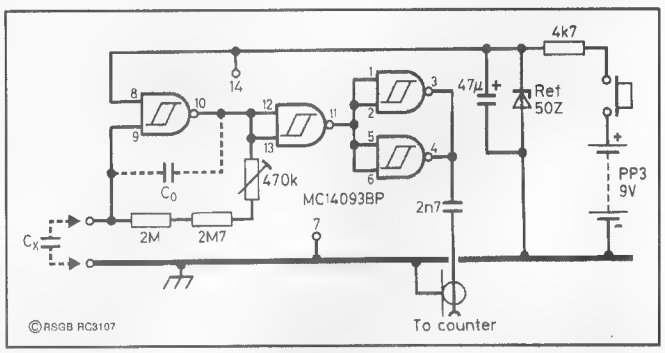

Fig 3. G3GKG's Simple Puffmeter.

insulated wires twisted together and adjusted by untwisting and snipping bits off the ends. If you must you could use a low value trimmer capacitor instead.

An accurately known capacitor of 1000 pF or more is connected as the unknown and the 470 kohm trimpot is adjusted to give a correct reading on the counter. Then an accurately known value around 10 pF is connected as the unknown and C0 ,the gimmick capacitor, is adjusted to give the correct reading. If you overshoot with the gimmick capacitor a replacement is cheap. These adjustments are repeated until you are satisfied with the calibration. If C0 has too high a value then it may be difficult to get low capacitance values to read accurately.

Lightning Detector

A lightning detector appeared in QST April 2002. The author was Bob Radmore N2PWP and the design came from Charles Wenzel of Wenzel Associates. The web site of Charles Wenzel is www.techlib.com/Electronics/Lightning Detectors.

The device is a receiver in the 300 kHz region which detects the static crash which accompanies the lightning. The idea is to alert you prior to the storm reaching you so you can minimise damage from lightning.

The circuit is shown in Fig 4. The device can be built into a small box with the whip on the top. The whip is tuned approximately by the 10 mH choke in series. The 330 microhenry choke and the 680 pF capacitor form a tuned circuit in the 300 kHz region. The static crash is amplified by Q1 and applied to a lamp flasher circuit. The flasher is adjusted so that it just doesn't flash in normal conditions by adjusting R4. The amplified static crash can then trip the flasher causing the lamp to flash.

For test purposes a piezo ignition gas stove lighter can be used as a source of static crashes. The detector should be triggerable from approximately 1 metre away.

Continued on page 28

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Technical Abstracts continued

Components are not particularly critical. You could build the circuit on come perforated strip board or you could use ugly construction with a piece of PC board laminate as the baseboard. The lamp is non critical and the type specified has a 2.5 volt 300 mA rating.

The sensitivity will be maximum if the antenna and the 10 mH choke are tuned to the same frequency as the tuned circuit made up by the 330 microhenry choke and the 680 pF capacitor in the 300 kHz region.

ar

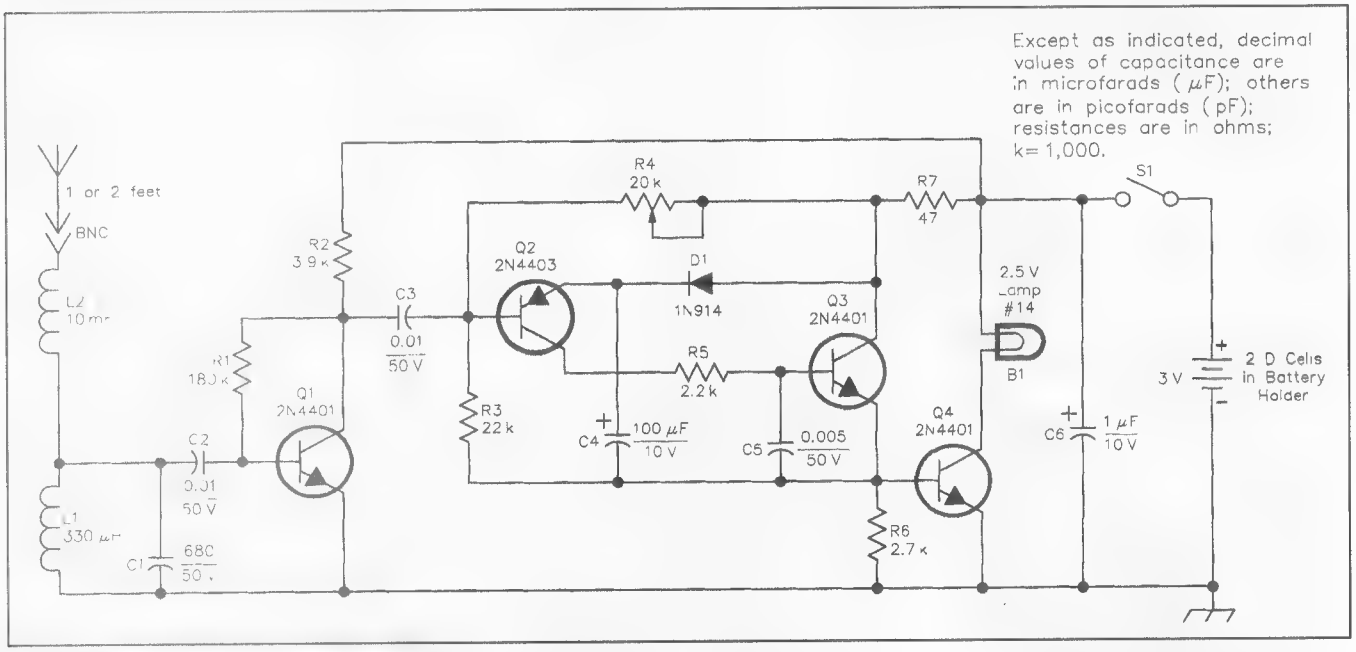
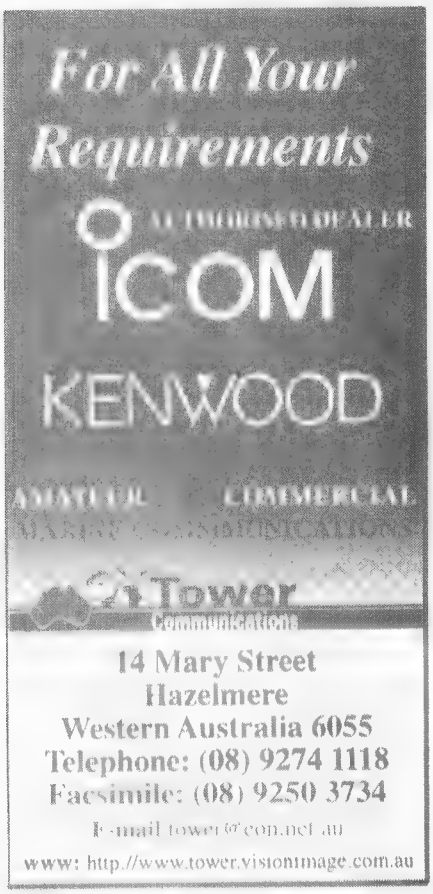
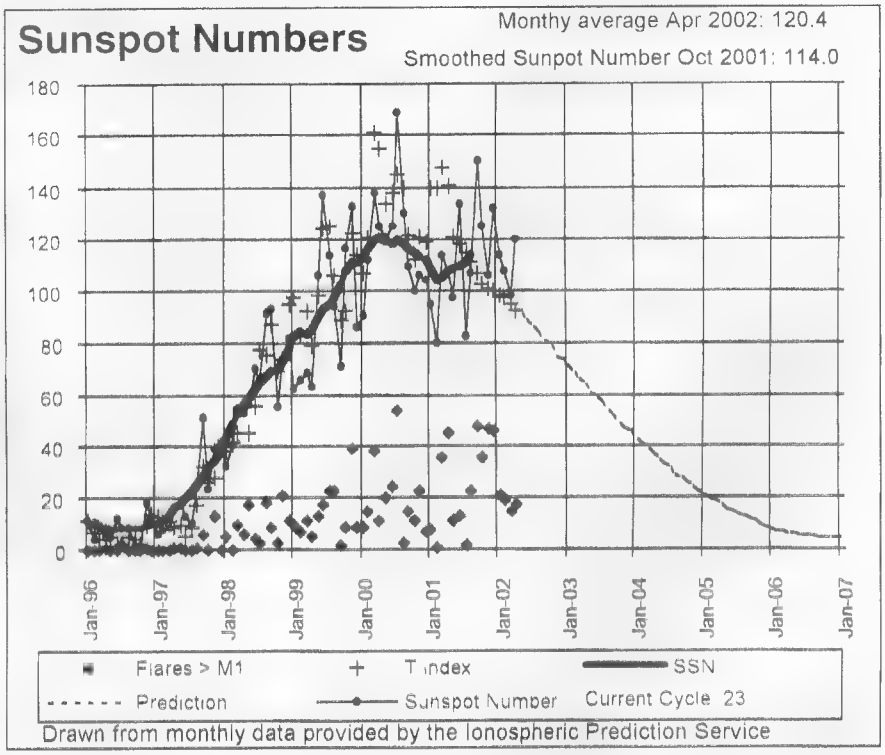


Fig 4 Lightning Detector.





Take Five — Help us to help you

As promised in the last month's AR I take pleasure in including a brief set of survey questions about the WIA and its house journal ***Amateur Radio*** (AR).
I would be grateful if you could take the time to respond to this survey so that the WIA can better understand how to deliver a quality service to its members, as well as all Australian amateur radio operators.

Completed forms should be returned to me directly.
A copy of this survey can also be found on the WIA web page at www.wia.org.au
All survey responses will be entered into a draw. The first three survey forms drawn will receive a free one year subscription to AR.
Many thanks in advance for your responses

73s from Ernest Hocking VK1LK

Separate survey form along this line

1. Are you a current member of the WIA

YES ☐ NO ☐

2. Have you been a member of the WIA in the past (If yes, would you please indicate why you have stopped your membership)

YES ☐ NO ☐

Comment:

3. Do you subscribe to AR

YES ☐ NO ☐

4. Have you subscribed to AR in the past (would you please indicate why you have stopped you subscription)

YES ☐ NO ☐

Comment:

5. Would you be interested in a subscription to AR in its current format.

YES ☐ NO ☐

6. Would you please indicate what factors would stop you from subscribing to AR:

Print quality ☐ Technical content ☐
Cost ☐ Other ☐

Comment:

7. Do you believe that the WIA keeps you up to date in amateur radio matters

YES ☐ NO ☐

Comment:

8. Do you believe that you are able to have your opinions and views heard by the WIA

YES ☐ NO ☐

Comment:

Please return this survey to:

Ernest Hocking
WIA Federal President
PO Box 691
Dickson
ACT 2602

Continues on next page

9. Indicate how you think the WIA can improve its communications with Australian amateurs.

Comment:

_____

_____

_____

_____

_____

_____

10. Would a electronic subscription to AR be of interest to you? (email or via the World Wide Web)

YES ☐ NO ☐

Comment:

_____

_____

_____

_____

11. Are you a currently licenced amateur radio operator?

YES ☐ NO ☐

12. Are you an amateur radio operator who currently does not hold a licence?

YES ☐ NO ☐

13. Are you interested in becoming an amateur radio operator?

YES ☐ NO ☐

14. Is there any specific reason why you do not currently hold a licence?

_____

_____

15. Do you have easy access to the Internet?

YES ☐ NO ☐

16. Are you a member of a local radio club?

YES ☐ NO ☐

17. Do you currently act in any role in support of amateur radio activities?

YES ☐ NO ☐

Role held:

_____

18. Would you be prepared to provide time, or other assistance to the WIA to help other amateurs in the promotion of amateur radio.

YES ☐ NO ☐

Comment:

_____

19. Gender MALE ☐ FEMALE ☐

20. Would you please indicate your age

under 20 ☐ 21—30 ☐

31—40 ☐ 41—50 ☐

51—60 ☐ 61—70 ☐

Over 70 ☐

If you are a member,
and wish to tell us more about how we can help you feel free to enclose a note.

If you are not a member,
please feel free to include a note about what you see as positive steps WIA could take to better serve amateur radio in general

_____

_____

_____

_____

Only fill in the section opposite if you wish to be in the draw for subscriptions.

If you wish to remain anonymous leave it blank.

Name_____**VK**_____

Address: _____

VK1 Notes

Forward Bias

Peter Kloppenburg VK1CPK

The Trash & Treasure sale at Farrer on Sunday, April 21, 2002 went very well indeed. In fact, so well, that the sausage sizzle was sold out within one hour. Tables and chairs were placed at strategic places so that visitors could enjoy their lunch while observing the goings on. The Long Gully Scouts Group attracted much attention with their sale of surplus to requirements radio gear from the Hughes Centre. Amateurs from all over came to have a look at the stalls, meet old friends, and strike up acquaintances with the younger generation of radio amateurs. The WIA-ACT Division also had a small stall selling Callbooks, Logbooks, and handing out membership application forms and other information regarding amateur radio in the ACT. One item in the sale that created much interest, were the AVO Model 9 multimeters. As they can measure 3000 volts AC/DC, they were a steal at $25.00. Just goes to prove that owners of linears still want to know what's happening inside these beasts. Those who made an effort to make the Trash & Treasure sale a success were Russell Manning (VK1ZRM), and Richard Gard (VK1RG)

The Division has acquired a valve tester from Lawrence Lawlor (VK1EL), as it was surplus to his requirements. The unit is kept at the Divisional Hamshack in Farrer and will be available for use when general meetings are held. However, the unit works only on 110 volt ac. Does anyone have a spare 240/110 volt - 50 watt - transformer they want to donate to the Division?

The WIA Federal AGM, otherwise known as the Annual Convention, will occur on 18-19-20 of May in Melbourne. As our President and Federal Councillor, Gilbert Hughes (VK1GH) will be overseas during that time slot; our Vice-President and Alternate Federal Councillor, Phil Longworth (VK1ZPL) will take his place at the convention. At the time of writing this, the committee is busy with discussions about the various motions that have been placed on the agenda, and how to vote on them. We will keep you informed about the result when the minutes of the convention are distributed. The Division is also sending Alan Hawes (VK1WX) as an observer to the convention. Phil and Alan will work together during the very important debates that will result from the various motions that are put to change the future of the WIA, as we know it.

The survey that Alan send out to all the members during the last few weeks has resulted in a much higher response than expected. Almost 60% have responded, and this is very pleasing to the committee. We are hoping that the result of the survey gives a good indication of what the members expect from the Division.

On a different note, an interesting antenna design for a vertical dipole has appeared in the March/April issue of the ARRL's Forum for communications Experimenters, aka QEX. Briefly, the dipole is not split in the middle but is driven by a kind of T-match in the form of a skirt consisting of 2 or 4 copper wires hanging down from the centre of the dipole. Advantage? No ground plane required simple construction, and four nylon guys to hold it up. Now for the good news: For our pensioner members and others on low budgets, you can now have half-yearly membership. When you receive your membership renewal slip, just pay half the annual fee. From then on you will be billed every six months. More Good News! As the Divisional Hamshack is becoming more popular as a meeting place for radio amateurs, Tony Bennett (VK1TB) is setting up a day-time meeting group for senior radio amateurs and those who are retired and don't like travelling at night. The idea is to get together at about 11.00 am, have a snack at lunch time, and depart at about 2.00 pm. Meeting date is still to be decided and depends on feedback. Buses stop every half hour almost in front of the Parks & Garden Depot in Longerenong Street. You can contact Tony by phone on 6258 6418 or via E-mail on: santon@bigpond.net

VK3 Notes

By Peter Mill VK3APO

WIA Victoria web site: www.wiavic.org.au, e-mail: wiavic@wiavic.org.au

Elmer Hall of Fame

A recent Council initiative aimed at recognising the contribution to our hobby of "Elmers". The term Elmer refers to those experienced and knowledgeable individuals who, over the years, have mentored, taught and encouraged prospective radio amateurs and the less experienced operators.

Many of today's radio amateurs can attribute their involvement and enjoyment in the hobby to an Elmer. WIA Victoria encourages Elmering and believes it is time we paid tribute to Elmers, both past and present.

Members are invited to nominate an Elmer by name and callsign, including silent keys, for induction in the WIA Victoria Elmer Hall of Fame.

Include a short citation of less than 50 words on how the Elmer helped you and e-mail your nomination to wiavic@wiavic.org.au - put 'Elmer' in the subject line.

Membership Growth

The number of new members joining WIA Victoria is almost double that at the same time last year. Council hopes that some of this increase can be attributed to the new initiatives that have been

implemented over the past months, and that it can be maintained over the coming months.

At a recent WIA Victoria Council meeting 21 new members were accepted. We thank those individuals and club officials who are promoting WIA membership.

WIA Exam Service

There are now 11 clubs that are part of the new WIA Exam Service. An updated list of Examination Team Leaders and their contact details has been put in the Resource section of the WIA Victoria website, and its contents can also be accessed through the WIA Victoria Office.

A check of the list reveals that there are a number of areas within Victoria that do not appear to have convenient availability of an examiner.

Recently appointed Councillor, Jonas Sadauskas VK3VF has been given the job of identifying possible problem areas and reporting his recommendations to the Council.

Club/Group Forum

WIA Victoria will be convening another Club Forum very soon, with Clubs being invited to submit agenda items. The following items have already been suggested for inclusion in the agenda

- Discussion on the proposed 'Foundation' Licence
- New EMR limits for amateur stations
- The annual availability of special callsign AX3ITU
- Great Australia Science Show 2002
- Classes and Exam scheduling
- WIA Victoria membership conditions for Club Affiliation

Changes for WIA Victoria Council

A number of major changes have occurred. Long serving Councillor, Barry Wilton VK3XV, resigned as Councillor. He had stepped down as Treasurer last December, but remained on the Council during the hand-over period of treasury matters. As always intended, the vacancy created on Council by his resignation, was filled by the new Treasurer, Jim Baxter VK3DBQ.

The Council in reviewing its future decided that due to the lack of suitable candidates, at this time, the Council unanimously ask Jim Linton VK3PC to continue as President, for the balance of the Council term. Jim VK3PC had announced to the membership late last year his intention to step down as President at this year's annual general meeting. However, at the request of the Council, he will now continue to serve as President until the end of the Council term in 2003. In other developments, two Councillors took on specific tasks. Keith Proctor VK3FT who joined Council late last year is now the Membership Officer looking at ways to increase membership, and retain existing members including the following up members who do not renew their membership. New Councillor, Jonas Sadauskas VK3VF, will monitor the geographic availability of amateur licence exams in Victoria under the new WIA Exam Service. The Council is concerned at the lack of exam teams in some major population centres in Victoria.

In other news from the Council, it is pleasing to learn that WIA Victoria membership remains healthy with double the number of new members when compared with the same period last year and VK3 WIA membership has now exceeded that of VK2.

VK7 Notes

"QRM"

We have been pleased this month to welcome three new members – actually one new and two who have renewed previous memberships. They are K.G. Rappell, VK7YKR, Shane Lynd, VK7KHZ, and Dick van Beek, VK7KVB. Shane was the guiding light behind the VERY successful ARISS contact between the Zeehan State School and the space station last month. We applaud such fine work promoting our hobby. Shane and Dick are two of very few hams on our rugged west coast.

At the Southern branch May meeting they were fortunate to have an informative lecture from Mr John Cole from Hydro Tasmania on the "Basslink" cable project linking Tasmania with the electricity grid of the "island up north". There has been a lot of controversy over whether there should be a simple earth return or a second cable return. It has now been decided that the second option is best and the project is set to go. The June meeting is an inspection of the Hobart Telephone exchange.

Flinders Island, a much wanted Island on the Air site is becoming more accessible with VK7KPB becoming more active from the island. If any amateur is visiting Flinders don't miss looking him and his XYL Pat up – they are a most hospitable couple. Keep your ears open for a DXpedition in the near future. We are looking to re-activate the "Tassie Devil" net which has been languishing for some time since Bob Jackson on our East coast passed away. Dale, VK3LBJ and Claureen, VK3LCM have been doing a great job of holding it together but it IS a Tasmanian Award and it is about time Tasmanian amateurs took more interest !!. It is on 3.59MHz at 8pm EST on Tuesday night. We are investigating a new section in the Devil award for I.R.L.P. contacts.

Experimentation is alive and well in Tassy. Rex Moncur, VK7MO has recently been wandering around the state getting contact on the mainland with Meteor scatter propagation, Very successful too. If any amateurs would like to join him in these experiments contact Rex at his Hobart address. Our "Spectrum" Monday, 7.30pm magazine program from the VK7AX station and broadcast on VHF and 3.59 (+ -) MHz is now in stereo using two of our northwest repeaters. By the time you read this a 7 MHz transmission should be on air.

A very successful combined meeting of the Northern and North-west branches was held at Deloraine one Sunday recently (Hams and their Ladies). Great fellowship and, for people who had not previously seen it, Terry, VK7ZTI, showed the Hydro interactive video of the Northwest Tasmania farm project.

Cheers for now, Ron, VK7RN.

VK4 Notes

Qnews

By Alistair Elrick VK4MV

Kennedy Region Scout Camp Radio Report

Saturday April 13th saw a very large contingent of Joeys, Cubs, Scouts, Venturers and Rovers gather at Camp Tarmaroo Bluewater to participate in the Kennedy Region Scout Camp 2002. Many activities were undertaken by the keen youth, some wet and muddy and some to make the gray matter tick. All activities were designed to improve ingenuity and introduce youth to new challenges and concepts. One such activity, conducted twice on Saturday, was the simulation of a typical session of Scouts Cubs On The Air. This is a service, which normally uses the School of the Air frequencies when class is out but this time was conducted on 146.550MHz from a simulated Mount Isa, a simulated Mulga Bush Station and a simulated Nulla Creek Station.

The stations were set up and run by Steve Watson VK4SGW, Gavin Reibelt VK4ZZ and a band of helpers from the Pimlico-Mundingburra Scout Group and activities always started with the Australian National Anthem and the Scouts Prayer followed by directions on drawing a map, knot tying, active games, the story round and noughts and crosses - all done via radio!! Participants had to use their imagination a bit including the groups moving between each station as "aircraft flights full of new station hands heading out into the bush". Everyone enjoyed the sessions and the equipment performed well.

The next radio-scouting activity will be the activation of the Tropical North Queensland Museum on 15-16 June for the International Museums Weekend.

Flying Pollie!

Amateur radio operators on the 20-metre band had the opportunity last week to work a rare call in an equally rare situation. Peter VK4TO, on a flight to RAAF Edinburgh, (with permission from pilots and flight crew), used some borrowed equipment to activate his callsign after a long absence from the HF bands to operate aeronautical mobile. Peter, a past president and current member of theTARCinc, is the Federal Member for Herbert in the Parliament of the Commonwealth of Australia, recently appointed Deputy Speaker for the Federal House of Representatives and has involvement in a number of subcommittees dealing with defence and development.

Peter is also planning a bit of a rare event for amateur radio operators in the Australian national capital in the near future. He can't divulge what the event will be, but it will be unique, a first, and it will be on the 2-metre band. So VK1's in Canberra, here's plenty of notice - keep an ear out for VK4TO!

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- RG8/U Belden 9913F7 High Flex Low Loss @ $5.55 per metre
- RG8/U - RF400 Belden 7810 Low Loss Sweep Tested to 6000MHz @ $6.30 per metre

LINK

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- RG8/213: B80-001 UHF connector (M) @ $8.80 each
- RG213: B30-001 N connector (M) @ $9.10 each
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AMSAT

Bill Magnusson VK3JT

Cellular telephones to the rescue

It seems that the amateur radio satellite fraternity is to some degree indebted to the skyrocketing use of cellular telephones.

Any long-term operator who has used the mode B and J birds over the years will be familiar with the particular kind of QRM emanating from illegal transmitters located to our north. I can recall falling victim to such interference back in the AO-6/7/8 days when we ran the annual Mt Skene expeditions. It was most annoying and sometimes ruined the early minutes of passes coming in from (or going out to) our north.

Recent reports seem to indicate that the situation has eased somewhat and the help has arrived from a most unlikely source, the increasing use of mobile (cellular) telephones. The interference came (and still comes) from illegally operated taxi radios, mobile and base, fishing boats and their base stations and small businesses talking to their mobiles and hand-helds in Asian countries to our north. These folk had found that amateur radio equipment was cheaply and freely available and that policing was nearly non-existent. It was open-slather – spectrum anarchy - and it prevailed for many years.

Lately, it seems that the ubiquitous mobile phone has taken over and is providing many of these folk with a cheaper and more reliable service. A mobile telephone would certainly be more robust in the hands of the casual user than, say an IC-735. Our friends in the USA have suffered with us on this front. Their problem came from the South American countries where spectrum anarchy also reigned. Recent discussions on the Amsat bulletin board have told of modes B and J becoming usable again in Japan and in southern USA and South America. If this trend continues we could see satellite designers taking it into account when planning frequencies for future amateur radio satellites. They are and always were popular modes, particularly for beginners. In recent years these bands had all but been abandoned by the planners as more and more countries reported the 2m and 70cm bands being almost unusable.

Mark Shuttleworth in space

On 27th April it was reported that the second "Space tourist" Mark Shuttleworth of South Africa had arrived at the International Space Station.

With two other visitors he travelled to ISS aboard a replacement Soyuz "lifeboat". During his short stay Mark was expected to speak to radio amateurs and operate some South African micro-gravity research projects. Shortly after Mark's arrival on the ISS, Tony VK5ZAI, Australian ARISS Co-ordinator was woken by a phone call from the USA at around 2:15 am and asked if he could be on air within 3 minutes to link a school in South Africa to Mark Shuttleworth on the Space Station. The schedule they had arranged locally had fallen down and they were in a real spot as several hundred children had been bussed in for the contact. With Tony's help, via the "telebridge" system the event went ahead and Mark was able to speak to the school-kids as planned. The contact received good coverage in the South African press.

Starshine Satellite re-enters

The third in the series of small "mirror-ball" satellites designed to be tracked by schoolchildren around the globe re-entered Earth's atmosphere on Friday April 26th, ending the mission after just over four months in space.

Its expected 8-10 month lifetime was cut short by unusually heavy solar activity. Dubbed Starshine-2 (even though it was the third in the series, see below), the one metre diameter mirror-ball satellite was deployed from shuttle Endeavour during its mission to the space station last December. See the following web site for more details, http://spaceflightnow.com/news/n0204/27starshine/ Although called Starshine-2, this satellite was actually the third to be launched. Following on from the success of Starshine-1, Starshine-2 was scheduled and "locked into" a launch spot on the shuttle Endeavour on its trip to the ISS in December 2001. This launch went ahead as planned ... but ... meanwhile, back at the ranch ... due to an unexpected launch opportunity; Starshine-3 obtained an earlier launch and was lofted into orbit as a secondary payload on a Canadian Kodiak launcher in September 2001. Thus the sequence went 1, 3, 2. Starshine-3 is still in orbit although its spin rate is slowing.

Starshine officials say they are preparing another pair of spacecraft for launch aboard shuttle mission STS-114 in early 2003. As an interesting 'aside' to this story, could I again ask if anyone out there has actually seen any of these satellites? Yes, they had telemetry transmitters in the amateur radio satellite bands but their primary purpose was to be *seen*. Hundreds of school-kids spent thousands of hours polishing the aluminium mirrors so they could see them reflecting the sun's light from space during the morning and evening twilight hours. No one in my group of satellite-watching friends managed to see any

sign of either Starshine 2 or 3. This despite many determined efforts on dark evenings when it *should* have been visible. In fact only one of the group ever saw Starshine-1 and that was for just a fleeting few flashes on one orbit. Being "seen" was the primary purpose of this series of satellites.... but reports of sightings seem to very thin on the ground. Perhaps children have better eyes than most amateurs ... hi.

Trans-Atlantic contact using AO-40 K-band downlinks

Mike, N1JEZ has announced what may well prove to be a milestone contact.

Here is a summary of his message posted on the AMSAT bulletin board on 8th May 2002. "I'd like to report a successful trans-atlantic contact this morning with K-band downlinks at both ends between Charlie, G3WDG and (myself) Mike, N1JEZ. First, I'd like to thank Charlie. This particular orbit was not the best in Europe. His super system made things easy. Contact was first established shortly after MA 114. Charlie and I had a very pleasant QSO throughout the window". Details of this contact including sound files of the QSO and pictures of the equipment used can be found on Mike's web site http://members.aol.com/mike73

Now, K-band, (24 GHz) may not be everyone's cup of tea but this contact shows that the spirit of adventure is not dead in amateur radio. Even terrestrial contacts on this band are rare and usually involve months of preparation and state-of-the-art gear. Such contacts are by no means trivial. As well as equipment considerations, many orbital and atmospheric conditions need to be met before a successful *satellite* contact can result. It demonstrates the great fortitude of the operators and vindicates the foresight of the AO-40 design team for having included K-band in the design of AO-40. Pioneering folk like Mike and Charlie are to be congratulated for venturing where few will dare to tread. There have been some other reports of the beacon being heard and of contacts being made. It was only on 14th April that Mike reported to the Amsat News Service that with "a great deal of excitement I'd like to report successful reception of the AO-40 Mode K beacon." Signal levels peaked at S-3, using a 0.5-meter dish with a linear feed. Congratulations guys, this must be about as close as it gets to the "cutting-edge" as far as amateur radio is concerned.

RS-21 - a short-lived but successful educational satellite

On 4th May Alex Papkov of the Kaluga Ground Control in Russia reported to the Amsat News Service that RS-21 had re-entered the atmosphere.

The ground station calculations gave its atmospheric re-entry as being during orbit 711, somewhere above the Pacific Ocean. "Thus, the micro-satellite Kolibri-2000/RS-21", he reported, "had successfully completed its planned operations". He went on, "We consider all aspects of this mission to have been a success. Collaboration between Australian high school students, Russian Space scientists and Russian high school students has been a highlight ... (of the mission)". The satellite's formal name was the Russian-Australian Scientific and Educational Micro-satellite. Radio Sport RS-21, was remotely launched on March 20, 2002 from a Russian Progress M-1-7 launcher. During its relatively short lifetime, RS-21 transmitted telemetry data and digitally recorded voice messages from its almost circular orbit just over 200 miles above the Earth. The very low altitude was probably the main cause of its short life in space. More information about the satellite can be found at:

http://www.arrl.org/news/features/2001/12/16/1/

French amateur "Pico-satellites" launched along with SPOT 5

This will be old news by the time you read it but it is included for archival purposes.

AMSAT-France announced around the time of writing that two French amateur radio picosats are planned to be launched as secondary payloads with the SPOT 5 satellite.

Ariane 4 flight V151 carrying SPOT 5 and IDEFIX amateur payloads is planned the 3rd May 2002. The two picosats, designed, built and funded by AMSAT-France are battery powered and should work for about 40 days. They will remain fastened to the third Ariane 4 stage, which is planned to orbit 800 km high. Both picosats will transmit NBFM voice recorded messages and digital telemetry data, the first one on 145,840 MHz and the other one on 435,270 MHz. Telemetry data will be transmitted using the now standard Amsat format 400 baud BPSK. Both picosats should be switched on about ten days after the launch. Who knows, they may even survive until you read this column.

Next month I will include the six-monthly summary of all currently operational amateur radio satellites.

The AMSAT group in Australia.

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. No formal application is necessary for membership and no membership fees apply. Graham maintains an e-mail mailing list for breaking news and such things as software releases. Members use the AMSAT-Australia HF net as a forum.

AMSAT-Australia HF net.

The net meets formally on the second Sunday evening of the month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000utc with early check-ins at 0945utc. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900utc with early check-ins at 0845utc. All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK,
GPO Box 2141,
Adelaide, SA. 5001.

Graham's email address is:
vk5agr@amsat.org

How's DX?

Ross Christie, VK3WAC
19 Browns Road, Montrose 3765, Vic.
Email Vk3wac@aol.com

How will my new 160m antenna fair with the new EMR regulations?

The Shortie

A month or so ago I erected a 160m antenna based on an old design by Doug De Maw, W1FB.

The antenna was called 'The Shortie' and was described as inductively loaded top and bottom (the bottom inductor being tapped for fine-tuning), 60 feet long with dual conductors for the radiator spaced 1 foot apart to widen the bandwidth. After constructing the antenna and hauling it up into a tree I was pleasantly surprised that it was almost resonant straight off. For a radial system I ran out three 60 foot radials and four 30 foot radials (laid out as best would fit in my backyard) and bonded them to the post and wire fences. Using this radial system the antenna resonated at 1885kHz with an SWR of 1.8:1 and with a 2:1 SWR bandwidth of 70kHz. It obviously needed lengthening so I took a guess and added 6 feet to the length of the radiator hoping that it would be enough to bring it into the VK allocation on 160m. The guess of 6 feet was a good one and it brought the resonant point down to 1835kHz. The bandwidth stayed almost the same. That evening I managed to work Tom, W8JI and was impressed when I received a 569 from him. I also worked a few VK4s and VK2s who also gave me good 579 and 599 reports. Since then I have managed to work VK9ML and K1B on it as well as a fair number of other VKs. The winter months are fast approaching and are traditionally the best months for DX on this band so perhaps the best is yet to come. I also wonder how my new 160m antenna will fair with the new EMR regulations?

EMRs

The ACA will introduce new Electromagnetic Radiation (EMR) regulations on the 1st of July and if the current proposal is anything to go by it is likely to have a significant impact on amateur operations.

At the time of writing the ACA has not yet finalised the details of the document and is still adding amendments though it seems that we will all be expected to comply with one of two levels of compliance. Having read some of the available details on the subject I suspect (and this is a personal opinion) that a large number of us will be at risk of contravening the EMR guidelines in one way or another. The tightening of the EMR regulations in the US and Europe led to many amateurs falling foul of city/council planners when erecting antennas and amateur stations that had been operating effectively for years found themselves at odds again with neighbours (who still had an axe to grind) who gladly used the EMR regulations as a new weapon.

We shall have to wait and see what lies in store for us but it would not surprise me in the least if the antenna installations at a significant number of QTHs fail the physical separation requirements. Mind you, the new regulations may be just the impetus some of us need to get that antenna up into clear air to catch that elusive bit of DX!

Tighter restrictions on operations can only mean further bad news for amateur radio so perhaps we had better get on the air and work some serious DX while we still can.

The DX

CN2PM, MOROCCO. Peter, G3WQU (ex E4/G3WQU), will be based in Laayoune (Western Sahara under Moroccan Administration) for the next couple of years. He says he will be active mainly at the weekends using CW and PSK31. QSL to Peter McKay, MINURSO, P.O. Box 80000, Laayoune, Western Sahara, Morocco. [TNX CN2PM and 425 DX News]

FR/T, TROMELIN ISLAND. Jacques, FR5ZU, intends to be active on all bands using SSB and RTTY using the call FR5ZU/T. As he is working on Tromelin his times of operation will need to fit in with his off duty hours, the best times to catch him will be between 0200 – 0400, 0900 – 1000 and 1300 – 1500 UTC. QSL to Jacques Quillet, 1 cite Meteorologique, Le Chaudron, 97490 Sainte Clotilde, France. [TNX F5NQL and 425 DX News]

VP8, FALKLAND ISLANDS. Less, GM3ITN, will be visiting the Falkland Islands for a few weeks and will operate as VP8ITN from Saunders Island in the Falklands group from the 15th until the 22nd of June. QSL direct to Less Hamilton (GM3ITN), Halls Land Hardgate, Clydebank Glasgow G81 6NR, SCOTLAND - U.K. [TNX GM3ITN and The Daily DX]

VQ9, CHAGOS ISLAND. Jesse, AB5RY, will be stationed here for quite a while and expects to spend another four months here on duty with the U.S Air Force. Activity has been on all bands using CW and SSB. QSL direct with a SASE to K5QM (CBA). [TNX AB5RY and OPDX]

IOTA Activity

C6, BAHAMAS. John, WZ8D, will be spending some time operating as C6AIE from **Abaco Island (NA-080)** in the Bahamas from the 3rd until the 13th of June. His main activity will be on 6 and 2 metres but will also spend some time on HF. QSL direct only to John Walker, WZ8D, 1930 Meredith Ln, Loveland, Ohio 45140, USA. [TNX WZ8D and 425 DX News]

JA, JAPAN. JI1PLF/1, 7N1GMK/1and 7L4PVR/1 announce that they will be active from **Hachijo Island (AS-043)** from the 7th until the 10th of June. Bands will be 160 – 10 metres CW, SSB and RTTY. QSL via their home calls either direct or via the JARL bureau. [TNX JI6KVR]

JA, JAPAN. JO1EPY/6 will be active from Kuchinoshima, **Tokara Archipelago (AS-049)** on 6, 10, 12, 15, 17 and 40 metres using CW and SSB over the period of the 8th until the 10th of June. QSL via home call either direct or through the bureau. [TNX JI6KVR]

SV, GREECE. Dimitris/SV2CCA, Chris/SV2DGH and Giannis/SV2FPU are travelling to **Alonissos Island (EU-072)** and will be active from the 2nd until the 16th of June. The group will be using the callsign J48ALO and plan to operate on 80 - 6 metres using CW and SSB. QSL via SV2DGH. Logs will be available at http://www.qsl.net/sv2dgh [TNX SV2DGH and 425 DX News]

VE, CANADA. Linda, VE9GLF and Len, VE9MY have plans for a trip to **St. Pierre & Miquelon (NA-032)** sometime around the end of July. They will be active on most HF bands and will also enter the IOTA Contest. Linda says, "We understand that there is a large demand for this one from Asia and Oceania", so lets not disappoint them. They will keep us informed with more info to follow. [TNX VE9MY]

Special Events

Those into soccer will be aware that Korea and Japan are hosting the **FIFA World Cup soccer** tournament. What you may not know is that both countries will have a number of special event stations on air to commemorate the games.

Korea will have a pre-event station on air using the call HL17FWC until the end of May. This will be followed by another ten special callsigns (one from each of the Korean call areas) that will be active during the games, from 31st of May until the 30th of June. These will be;

DT1FWC in Seoul
DT2FWC in Busan
DT3FWC in Daegu
DT4FWC in Inchon
DT5FWC in Gwangju
DT6FWC in daejeon
DT7FWC in Ulsan
DT8FWC in Suwon
DT9FWC in Jeonju
DT0FWC in Seogwipo.

Individual Korean operators will be able to substitute the number 17 for there normal callsign numeral. There will also be a number of special awards available for these events and further details can be had from DS1BHE at centaurs@hitel.net The QSL route for all special event stations is via HL0HQ. For more information go to http://fifaworldcup.yahoo.com/en/da/

Japan will also mark the games by activating ten special callsigns; 8M1C, 8N1C, 8J1C, 8J2C, 8N3C, 8J3C, 8J6C, 8J7C, 8J8C and 8J0C over the period of the 1st of May until the 30th of June. Local hams will be manning the stations, with support from the JARL, and will be allowed to run 1kW. An award called the '2002 Suffix C' will be available to everyone who works one or more of these stations. To claim the award no QSL's will be necessary, simply send a list specifying the date, band and mode to the JARL Award Desk, 1- 14 - 5, Sugamo,Toshima-ku, Tokyo 170-8073 Japan. The fee is eight IRCs or $8 U.S. or 1,000 Japanese yen. Awards will be available for the following categories, single band, single mode, QRP/QRPp or satellite. Further information can be had by Email at oper@jarl.or.jp.

The International Lighthouse and Lightship Weekend will begin this year at 0001 UTC on Saturday the 17th and finish at 2359 UTC on Sunday the 18th of August. Like every other year, this event is not a contest. It is simply a chance to get some operating done from an interesting location and to have some fun while we're at it. There is no requirement to be on for the whole weekend, it doesn't need to be a fully fledged operating campaign nor should it be a race to work as many stations as possible. The whole idea is to have fun and to provide contacts for young, old, experienced and new hams alike. The only requirement is that the station is set up near to a lighthouse, lightship or maritime beacon. Information to be included in QSO's is RST, QTH and the ARLHS number of the lighthouse (this can be obtained from arlhs.com/awards/arlhs-numbers.html). If you plan to join in the fun you can download an entry form from vk2ce.com/illw/index.html

DXpeditions

CY9, St PAUL ISLAND. Operators W7XU, N0QJM, W0SD, W0OE, WV2B, VE1AAO and VE9DH will be active from St. Paul island over the period of the 29th of June until the 8th of July. The group will man two fulltime stations and a third part-time during peak propagation. The camp will be set up on the west side of the island where it will have a clear take-off towards Asia, South America, North America and most of Europe. This will be the first time that operations have taken place from this side of the island because landing is difficult due to the winds and high seas. A 6 m station using CW and SSB, running 1kW to a yagi antenna, will be operating on 50157 kHz listening up. Liaison will be on 28885 and updates will be available via Email on the 6 m site. On HF the team will use a 'Hex' beam for 20 to 10 metres and vertical for 30 m and 40 m. No operation will take place on 80 m or 160 m. HF modes and frequencies will be RTTY, SSB and CW on 7080, 10115, 14080, 18080, 21080, 24908, 28080, 7005, 10105, 14020, 18100, 21020, 24900, 28020, 14195, 18145, 21295, 24945 and 28495. QSL via W7XU. [TNX W7XU and The Daily DX]

Round up

Hans, L40370, has had a keen ear on the bands lately and has managed to catch XV2J whom he says is a bit of a regular on 15 m CW between 0600 and 0700 UTC. Hans also managed to log the following,

Call	Band	Mode	UTC
HL17FWC (QSL via HL0HQ)	15m	CW	0 8 . 0 0
RW1AI/ANT	15m	CW	07.00
OH0/OH3TM	17m	CW	13.45
JA1KJW/JD1	20m	CW	14.30
9J2CA	20m		
5H3RK	30m		

The special callsign IU7LE will be activated on weekends from June until December. The 'Leece and Salento DX Team' will be celebrating 75 years of National A.R.I. The team will be active on all HF bands, including WARC, using CW and SSB. A special QSL card will be available via I7PXV via the bureau or direct. [TNX I7PXV and The Daily DX]

UR, UKRAINE. The special call **EM11E (Echo Mike One One Echo)** will be aired from various Ukrainan islands between the 1st of May and the 31st of August. The islands are located in the river Dniper, in the Sea of Azov and in the Black Sea. Only the islands in the Black Sea may count for IOTA. QSL via Alexander Shevchenko, UR5EAW, Pelina str. 29, Dnepropetrovsk 49107 UA, Ukraine. [TNX UR5EAW and 425 DX News]

Paul Pai, BV4FH, reports receiving the formal authorization and documentation for the upcoming **BQ9P Pratas Island DXpedition** planned for later this year. The operation is expected to take place between the 4th and 13th of June. [TNX BV4FH and The Daily DX]

The Russian Lighthouse Award (RLHA) is a new award and is sponsored by the Russian Robinson Club. A copy of the rules, list of lighthouses and more information can be found at the website http://www.hamradio.ru/rrc/rlha/ [TNX VA3RJ and 425 DX News]

From the 20th of April Argentinian amateurs whose calls begin in the LU, LW and AZ prefixes have been allowed to use alternative special prefixes. LU can use AY, LW can use L5 and AZ can use L6. The prefix change is to celebrate the 25th anniversary of GACW (Grupo Argentino de CW) and to support the program 'Amateur Radio, a safe way for our children' (perhaps the translator had a little difficulty?) which is sponsored by GACW and by the Radio Club USHUAIA (LU8XW). Further details are available at the Web site http://geocities.com/rcushu [TNX OPDX]

An RSGB news report says that for the month of June only all UK stations can use GQ as their prefix instead of their normal prefix. For example; G4BWP can sign GQ4BWP, GM3ITN = GQ3ITN, M0BDW = MQ0BDW, MI0BME = MQ0BME and 2E0ANY = 2Q0ANY [TNX RSGB]

If you do a lot of travelling and would like to operate while you are overseas then a new website compiled by Veke, OH2MCN, will be of interest to you. Veke has collected data on what documents and information etc is required to satisfy the communications authorities of over 250 countries. The website can be found at http://www.qsl.net/oh2mcn/license.htm [TNX OH2MCN and 425 DX News]

And finally, everyone who has managed to work Ed, P5/4L4FN will be pleased to know that their QSL card is in the mail (or at least the bureau).

Sources

Many thanks to the following individuals and organisations for the information in this months DX Notes.

L40370, F5NQL, GM3ITN, AB5RY, WZ8D, JI6KVR, SV2DGH, VE9MY, I7PXV, CN2PM, UR5EAW, BV4FH, OH2MCN, VA3RJ, W7XU, The Daily DX, RSGB, OPDX, 425 DX News

Silent Key

Hugh Lloyd, VK5BC

Hughie Lloyd was born in 1917, and grew up in the inner suburb of Hindmarsh.

He and his brothers, Bill and Charlie, became amateurs in their 'teens, and there was often rivalry for space to set up new equipment.

Hughie's first job was as a radio engineer for Adelaide radio station 5DN.

In 1942, he moved to the South Australian Riverland to work for radio 5RM. The residence, studio, and transmitting station were all together on the top of a cliff overlooking a bend in the River Murray, midway between the river towns of Berri and Renmark.

Hughie's six children grew up on the property, in an establishment where "all lived and breathed radio."

5DN's lease over 5RM expired in 1952, so Adelaide station 5KA took over the ownership. Hughie continued with his radio engineering duties until about 1980, but continued in his retirement with his first love, amateur radio.

When 5KA decided to move the 5RM Transmitting site, Hughie negotiated skilfully to ensure that the existing giant masts stayed put. He thus ended up with one of the best antennae farms in the state.

The wider family, and friends of all sorts, would visit the old stone house on the cliff-top. Stories of snakes in the toilet, good fishing, the 1956 flood, and clean (!) Murray water still circulate amongst the family and friends.

Hughie created a considerable collection of home brew gear of all sorts. Only he knew the secret of how they all worked, but each was skilfully and professionally constructed.

He was a winner of the Ross Hull Contest, was active on HF and held various Australian 6 metre records for many years.

The Amateur Radio fraternity owes a great debt to him, as he tutored many in CW and the technical side of the hobby.

His burial service was held on April 29th, at the Berri Cemetery.

Amongst the large crowd of family, friends, and fellow amateurs, were Lorry Sjoberg (now with radio 5MMM), and Rick Palmer, (representing the Golden Years of Radio.)

We gathered there to say "73" to a man who was a patriarch in the South Australian Riverland, radio broadcasting, and one of the greats of our own great hobby.

Our heartfelt condolences to his wife, Dorn, his children, and to his wider family.

John Elliott VK5EMI
Email : dellio2@bigpond.net.au

Ham Shack Computers

Alan Gibbs, VK6PG
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Part 15
Windows XP *Review*

Few Microsoft Windows™ users have not suffered "blue screens", lock-ups, and configuration problems with their Ham Shack Computers. Every version of Windows has been subject to worldwide criticism. However, the extent of these problems has been difficult to target because of the myriad of software and hardware in general use. It is quoted that Microsoft Windows XP is the most reliable operating system available on the market today. So, let's look closer.

Radio Amateurs like to fiddle with their computers, they try new software especially for the popular data modes. Installation swamps the hard drive with hundreds of unusual files. Once tried, the software is uninstalled only to leave many files lurking around inside the operating system that can cause problems!

Over time, the operating system reads some of these files resulting in unrelated commands that confuse the system and the computer crashes or just locks up for no apparent reason. "But why"?

Today's software is written for 16-bit or 32-bit FATs (File Allocation Table), and because each package is written in one of these modes we all expect the program to work. Newer MS Windows NT (New Technology), Windows 2000 and Windows XP (XPerience!) use alternate NTFS (New Technology File System) adding another dimension to our woes. Take a look at any software package and its specification describes the type of operation system that is most suited. Each version of Windows also includes "backward compatibility" which means although it might be a 32-bit operating system, it will run 16-bit software. Confusing when NTFS is added to the equation. Most RAs don't want to know about all this "compatibility stuff" – they just want to get on with using their computers, working DX and eliminating "blue screen" problems forever.

Development History

In 1990, Microsoft released Windows 3.0 that was quickly superseded by Windows 3.1 because of problems. Later, Windows 3.11 was born and the world settled down to some degree of reliability using 16-bit applications. In 1994, Windows 95 was promised as being the answer. However three major updates by Microsoft failed to produce a stable operating system. 1997 saw a revamped Windows 95 called Windows 98. Within weeks, Microsoft realised it had got things wrong yet again and posted a fresh copy of Windows 98 (Second Edition) to every registered user of Windows 98. In parallel with all this fumbling, Microsoft had developed Windows NT, using native core NTFS, for professional use and it found success for the first time.

Hence, in 2001 Microsoft enhanced the best attributes of Windows 2000 and NT into their latest offering of Windows XP. Along the way in 1999, Microsoft released Windows ME (Millennium Edition) seemingly Windows 98SE with a "resprayed front panel, new 6146Bs in the finals and nice shiny knobs" and – you guessed it - more bugs!

Hardware History

Since the dawn of MS Windows, and the subsequent updates along the way that introduced more "bloatware" (bigger and more files in the operating system), the hardware manufactures were having a ball with users trying to upgrade their computers just to keep up with the software. Gone were the days when clever authors tried to write effective, bulletproof applications that were reliable and fitted on one floppy disk. We've all been caught out in the continuous spiral of upgrading hardware and software. Windows XP is supposed to be the answer. Issued in August 2001, XP is already subject to more upgrades.

Windows XP Requirements

If your Ham Shack Computer has LESS than the following specification – stick with Windows 98SE for now.

- 500MHz processor (Celeron, AMD Duron, Pentium II/III) minimum.
- 128 MB RAM, 256 preferred.
- 40GB Hard Drive minimum.
- High speed CD-ROM drive.
- BX or higher, PCI PnP Motherboard.
- USB and Serial/Parallel ports.
- High Speed PnP Modem and an Internet Account with your local ISP.

Ready for Windows XP?

XP comes in two flavours. The XP Home Edition and the more expensive XP Professional Edition both vintage August 2001 and each require immediate online authentication and upgrades! Subsets are the full versions and the upgrade versions. Most RA's will opt for the XP Home Edition Upgrade on CD-ROM.

Next, prepare a new floppy disk with your Windows 98SE boot files, CD-ROM install files including COMMAND.COM, FDISK.EXE and FORMAT.COM etc. NEVER EVER install Windows XP as an upgrade otherwise you will be stuck with all your old unidentified files wandering around your new XP installation. If you do, prepare yourself for more frustration because it will ultimately fail and you're back to square-one before the upgrade!

You will need the original Windows 95/98/2000/NT/ME CDs before starting (including the key number), AND ALL your software disks ready for a "clean install". It's assumed that you were wise enough to have backed up ALL your DATA FILES as described in earlier issues of this series. Include some scrap paper for notes, and allow at least one full day's grind to fully setup and get your Ham Shack Computer fully operational. Make sure that the kids are out for the day, and the XYL has some videos to watch in the sitting room. Lashings of sandwiches and plenty of coffee also helps because Microsoft say that you are in for an EXPERIENCE (XP). They are dead right here because it's NOT going to be easy even for our XPerienced AR computer users!

Installing Windows XP

Boot the computer from your floppy drive into DOS. Format the hard drive by running FORMAT C: from the A:\ prompt. Note that all data will be erased in readiness for a "clean install of XP". Once done, boot again and check the BIOS by holding down the DEL key on the keyboard. Reboot again and let the computer identify the CD-ROM drive as DRIVE D:\ Insert your Windows XP CD-ROM that will AutoPlay bringing up the image shown on the previous page. Select "Install Windows XP" and follow the instructions on the screen when displayed. During the installation you will be asked to insert your previous version of Windows to verify that the installation is legal. Once done, another prompt asks for the Windows XP CD again to continue the installation. When asked to select which type of file system you prefer – SELECT NTFS, then continue. Some 350MB later your computer will boot into Windows XP and you're done (for now anyway, Hi).

Authenticate Windows XP

EVERY NEW INSTALLATION of XP must have online authentication before the user can continue with "their XPerience"! To do this, install your modem and configure the ISP connection from the Control Panel. Place a shortcut on the desktop and connect. Once connected, select START > Help and Support Center > Authenticate XP. A displayed message soon indicates that Microsoft has accepted your installation. Many readers will not be happy with this process but that's the system most modern software developers now use to protect their copyright interests and combat piracy. From now on Microsoft will invite you to update your system for FREE. If you lend your copy of XP to a friend then prepare yourself for legal action by Microsoft Corporation.

Installing your Software

Once you have "fiddled" with your new XP installation, and got to know how it "looks and feels", then tried the "Classic View" options from the Folder> Properties Options, readers will find that XP is much like earlier Windows Classic View but much faster and cleaner. Systematically install your favourite software like office applications, logbook and control applications, DigiPan and so forth. Fully configure and test each application as you work on your computer. If everything works correctly, press on until your Ham Shack Computer is to your liking once again. In most cases you will have to update your component drivers. These include Zip Drives, Scanners, Cameras, and any non Plug and Play devices. Windows seeks "signed drivers" but most Win 2000/NT drivers will work very well under XP. To complete the fine-tuning of Windows XP and all your programs it will take several weeks of operating, moving ahead each time with small changes. For networked users, XP is a dream running TCP/IP instead of NetBEUI, and XP makes a fine server on your Home Network.

Conclusions

But is it worth the time and money for RAs to upgrade to Windows XP? Yes it is, provided you do a clean install and have the hardware grunt to support NTFS. The writer has had very bad "XPeriences" with over-the-top upgrading where XP has failed miserably. But starting from scratch, a clean install works well and the "blue screens" have hopefully taken their place in the pages of history. Over the last three months, the writer has tested many popular AR applications and every one has performed without fail, which was not the case when the writer was using Windows 98SE.

Ham Tip No. 15.

Before venturing towards Windows XP, do some serious reading and carefully back-up all your data files. *The Windows XP Pocketbook* published by ACP Publishing Pty Ltd (ISBN 1863962530) is available at newsagents for $19:95 and comes highly recommended. It's understandable and more comprehensive than the Microsoft so called "booklet" included with the Windows XP box package. The Pocketbook covers all the common steps needed to really get things moving quickly, and includes a CD-ROM with common drivers and other applications to streamline your new MS Windows XPerience!

Ham Shack Computers, No: 16 for next month, - "Hard Drive Crash", follows on nicely from this Windows XP Review. Many of the rules are the same. If you've have ever experienced a Hard Drive Crash, you will understand why every AR operator MUST be prepared because, just like the HoleProof™ UnderDaks commercial on TV - "one day yer gunner get caught wiv yer pants down"!

(1) Ham Shack Computers Web Site:
http://www2.tpg.com.au/users/vk6pg

73s de Alan, VK6PG

Contest Calendar
June – August 2002

June	1	VK/trans-Tasman Contest		(May 02)
June	1/2	South American WW CW Contest		
June	8	QRP Day		(Apr 02)
June	8/9	ANARTS WW RTTY Contest		
June	8/9	Queen Elizabeth II Golden Jubilee Contest	(CW/SSB)	(Apr 02)
June	8	Asia-Pacific Sprint	(SSB)	(May 02)
June	15/16	Novice Contest	(CW/SSB)	(May 02)
June	22/23	SP QRP Contest	(CW)	
June	22/23	Marconi Memorial HF Contest	(CW)	
June	22/23	ARRL Field Day	(All modes)	
July	1	RAC Canada Day Contest	(CW/SSB)	
July	6/7	Internet 6 metre Contest	(CW/SSB)	
July	13	Jack Files Contest	(All)	(Jun 02)
July	13/14	IARU HF World Championship	(CW/SSB)	
July	20	Pacific 160 Metres Contest	(CW/SSB)	(Jun 02)
July	27/28	Russian RTTY WW Contest	(RTTY)	
July	27/28	IOTA Contest	(CW/SSB)	
July	27	Waitakere Sprint	(SSB)	
Aug	3	Waitakere Sprint	(CW)	
Aug	3	European HF Championship	(CW/SSB)	
Aug	4	YO DX Contest	(CW/SSB)	
Aug	10/11	Worked All Europe DX Contest	(CW)	
Aug	17	SARTG WW RTTY Contest	(RTTY)	
Aug	17/18	Keymen's Club of Japan Contest	(CW)	
Aug	17/18	SEANET Contest	(All)	(Jul 02)
Aug	17/18	Remembrance Day Contest	(CW/SSB)	(Jun 02)
Aug	24/25	SCC RTTY Championship	(RTTY)	
Aug	24/25	TOEC WW GRID Contest	(CW)	
Aug	24/25	ALARA Contest	(CW/SSB)	(Jun 02)

Contests

Ian GodsilVK3VP
contests@wia.org.au

Greetings to all Readers...

I wonder how many of you like hunting for good DX? If you do, why? Is it just to get an extra country in your log, or is it the feeling that we are all brothers and sisters in Amateur Radio? Have you ever stopped to consider how true this may be?

I would like to suggest this month that our efforts in contests can make us very aware that we may be in contact with all sorts of people — the "big gun" types with massive stations and equally massive sums of money spent on them frequently; the "little pistols" with only moderate equipment (and I suspect that this is most of us); and the "pop guns" – chaps in war-torn and deprived places like Afghanistan who nevertheless get on air when they can and help themselves as well as us to gain that 'rare one'.

Behind all this is a desire not only to make our entry in the contest concerned, but to meet one another as fellow citizens of the World and to know that we are all enjoying the same wonderful hobby and not having to worry about political boundaries or ideologies.

Those of you who do not work HF bands miss out on this experience, so why not give it a try? These contacts are not mode-specific activities, as there are plenty of operators on many modes, including the more recent digital modes.

However, don't expect wonders from poorer countries where there is no money for modern radios and computers. This in itself is a reminder that we all share a common basic knowledge, use of modes and bands and, above all that, a satisfaction that we are Amateur Radio Operators. This can apply to the quick-fire contact style needed for contests as much as to the friendly chat of a DX QSO.

Plenty of contests coming along now, so look forward to hearing you. Please note the Jack Files Contest in July as we welcome John Spooner VK4AJS to the post of Contest Manager this year

At the time of writing this I am still in the midst of setting up my new shack – very small and cramped it will be, but better than nothing! This reminds me that if the desire is there, it will be possible to find a way.

Good DXing and contesting. 73, Ian Godsil

Rules: Jack Files Contest 2002

from John Spooner VK4AJS Contest Manager

Saturday 13 July, 2002 0800Z – 1400Z

This contest is sponsored by the WIAQ Division and is in honour of the late Jack Files, a long-serving VK4 WIA councillor.

Object is for amateurs to work as many other amateur stations, and particularly as many different VK4 shires and towns, as possible.

Date: Saturday, 13 July, 2002

Time: 0800UTC – 1400UTC in six one-hour blocks for the purpose of duplicate contacts.

Band: 80 metres only. Use 3.5 MHz – 3.7 MHz to put all licence grades on an equal footing.

Modes: Either CW; SSB; PSK31, or All Modes

Categories: Single Operator; Club Station

Exchange: Non-VK4 stations will send RS(T) plus serial number starting at 001 and incrementing by one for each contact. VK4 stations will send RS(T), serial number and two-letter shire or town code for purposes of multipliers.

Score: One point per contact

Multipliers: Each VK4 Shire or Town counts as a multiplier.

Final Score is total QSO points X total number of multipliers.

Repeat Contacts: In order to make best use of the band, stations may be contacted once in each hour on each mode. These repeat contacts must not be consecutive.

Logs must show full details of all QSOs and must be accompanied by a Summary Sheet showing operator's name; address; callsign; category and mode entered; claimed score and a declaration that the rules and spirit of the contest were observed.

Send logs by mail to: Files Contest Manager, PO Box 1006, Yeppoon, 4703 Logs may be sent by e-mail in text format to: vk4ajs@optusnet.com.au

Closing date for all entries is 13 August, 2002.

Certificates will be awarded to the top scorers in each mode in each VK State, ZL, P29 and any DX country (i.e. country outside VK, ZL or P29).

Rules Pacific 160 Metres Contest 2002

from Ian Godsil VK3VP, Contest Manager

Saturday, 20 July, 2002. 0700 UTC - 2300 UTC

Object: P2, ZL and VK stations to make as many contacts as possible on 160 metres. DX stations are encouraged to participate, but may only work P2, ZL or VK.

Categories: Single Operator; Multi-operator; SWL

Sections: CW only; SSB only; MIXED

Frequencies: CW: 1810 - 1840 kHz

SSB: 1843 - 1875 kHz

(Note: Guard band 1840 - 1843 kHz. Contacts not permitted)

Exchange: RS(T) plus serial number beginning at 001.

Score:

For P2, ZL, VK -

One point for QSO with own call area;

two points for other call areas in ZL or VK;

three points for Pacific Islands (ZK1, VK9)

For Pacific Islands -

one point for QSO with own call area;

three points for P2, ZL, VK;

five points for QSOs outside P2, ZL, VK.

For stations outside P2, ZL, VK or Pacific Islands -

five points per QSO.

Multiplier:

For P2, ZL, VK –

total number of VK, ZL and P2 call areas worked, plus OTHER DXCC countries.

For stations outside P2, ZL, VK -

total number of P2, ZL and VK call areas worked.

Final Score: Total QSO points times total multipliers.

Certificates: to top scorers in each mode, call area of ZL and VK and in each DXCC country.

Logs: Please show full QSO details of call worked; mode; time UTC; exchange. Include Summary Sheet showing operator's callsign; name; mailing address; category and section entered; points claimed and a signed Declaration. Logs submitted electronically need only show operator's name in lieu of signature, but must show all other information.

Send Logs:

1. *By mail to* -
   Ian Godsil VK3VP,
   363 Nepean Highway, Chelsea, 3196, Australia
2. *By e-mail* in ASCII/Cabrillo format to:
   contests@wia.org.au

by 16 August, 2002

Rules: Remembrance Day Contest 2002

Presented by Alek Petkovic VK6APK

17/18 August 0800Z Sat – 0759Z Sun

Purpose: This contest commemorates the amateurs who died during WWII and is designed to encourage friendly participation and help improve the operating skills of participants. It is held close to 15 August, the date when hostilities ceased in the South-West Pacific area. It is preceded by a short opening address by a notable personality transmitted on various WIA frequencies during the 15 minutes prior to the contest. During this ceremony, a roll call of amateurs who paid the supreme sacrifice is read.

A perpetual trophy is awarded annually to the WIA Division with the best performance. The name of the winning Division is inscribed on the trophy, and that Division then holds the trophy for 12 months. The Division also is given a certificate, as are leading entrants.

Objective: Amateurs in each VK call area will endeavour to contact amateurs in other VK call areas, ZL and P2.

Contest Period: 0800Z Saturday, 17 August to 0759Z Sunday, 18 August, 2002. As a mark of respect, stations are asked to observe 15 minutes' silence prior to the start of the contest, during which the opening ceremony will be broadcast.

Bands: All MF, HF and VHF+ bands (no WARC). On 50 MHz and above amateurs may also contact other amateurs in their own call area.

Rules:

1. **Categories:**
   (a) High Frequency for operation on bands below 50 MHz;
   (b) Very High Frequency for operation on and above 50 MHz;
   (c) Single Operator;
   (d) Multi-operator;
2. Within each Category the **Sections** are:
   (a) Transmitting Phone (AM, FM, SSB, TV);
   (b) Transmitting CW (CW); **Note:** Digital modes such as Packet, RTTY, AMTOR, PSK31 etc are excluded from the contest.
   (c) Transmitting Open (a) and (b);
   (d) Receiving (a), (b) or (c).
3. All amateurs in Australia, Papua New Guinea and New Zealand may enter the contest, whether their stations are fixed, portable or mobile.
4. Cross-band and cross-mode contacts are not permitted.
5. Call: "CQ RD", "CQ CONTEST" or "CQ TEST".
6. On bands up to 30 MHz stations may be contacted once per band using each mode, ie twice per band using CW and Phone.
7. On 50 MHz and above, the same station in any call area may be worked using any of the modes listed at intervals of not less than two hours since the previous contact on that band and mode. *Note: Entrants are reminded that Contest operation is not permitted in the band 50.100 – 50.150MHz.*

8a. Both single and multi-operator entries are permitted. To be eligible as a single operator, one person must perform all operating and logging activities without assistance, using his or her own callsign. More than one person can use the same station and remain a single operator providing that each uses his or her own callsign, submits a separate log under that callsign and does not receive operating or logging assistance in any way during the contest.

8b. Holders of more than one licence or callsign may submit a separate entry for each callsign held.

9a. Multi-operator stations are only allowed one transmitter per band/mode at any one time. Simultaneous transmissions on different bands are permitted. Simultaneous transmissions on the same band but different modes are permitted.

9b. Automated operation is not permitted. The operator must have physical control of the station for each contact. CW and voice keyers are permitted, as is the use of computers for logging.

10. **Exchange:** For a contact to be valid, numbers must be exchanged between stations making the contact. Exchange RS for phone and RST for CW, followed by three figures commencing at 001 and incrementing by one for each successive contact.

11. Contacts via repeater (including satellite) are not permitted for scoring purposes. Contacts may be arranged through a repeater. Operation on repeater frequencies in simplex is not permitted.

12. **Score:** on 160 m two points per completed valid contact; on all other bands one point; on CW double points.

13. **Logs** should be in the format shown below and accompanied by a **Summary Sheet** showing callsign; name; address; category; section; for multi-operator stations a list of the operators; total score; declaration: **I hereby certify that I have operated in accordance with the rules and spirit of the contest**; signed; date.

14. Entrants operating on both HF and VHF are requested to submit **separate logs and summary sheets** for both areas.

15. VK entrants temporarily operating outside their allocated call area, including those outside continental Australia as defined for DXCC, can elect to have their points credited to their home Division by making a statement to that effect on their summary sheet(s).

16. **Send** logs and summary sheets by mail to: RD Contest Co-ordinator, A Petkovic VK6APK, 26 Freeman Way, Marmion, WA 6020, by Friday 20 September, 2002. Endorse envelope **"Remembrance Day Contest"** on front outside. Logs may also be sent by email to: contests@wia.org.au by 13 September, 2002.
    Late entries will not be eligible.

17. **Certificates** will be awarded to the leading entrants in each section, both single and multi-operator; in each Division; P2 and ZL. Entrants must make at least 10 contacts to be eligible for awards, unless otherwise

decided by the Contest Manager.

18. Any station observed as departing from the generally accepted codes of operating ethics may be disqualified.

Determination of Winning Division:

Unless otherwise elected by the entrant concerned, the scores of VK0 stations will be credited to VK7, and the scores of VK9 to the mainland call area which is geographically closest. Scores of P2, ZL and SWL stations will not be included in these calculations.

For each Division, an "improvement factor" will be calculated as follows:

(a) For transmitting logs only, HF and VHF "Benchmarks" for each Division will be established, against which its performance for the current year is judged. The same formula will be used for HF and VHF, inserting the appropriate figures:

$$B = 0.25P + 0.75L$$

where B = this year's benchmark, P = last year's total points, and L = last year's benchmark.

(b) For each Division, HF and VHF Improvement Factors will then be calculated. Once again the same formula will be used for both HF and VHF, inserting appropriate figures:

I/F = Total points (this year)/Benchmark

where I/F = improvement factor.

(c) For each Division, the HF and VHF Improvment Factors will then be averaged:

Overall I/F = (HF I/F + VHF I/F)/2.

(d) The Division which achieves the highest overall improvement factor will be declared the winner.

2002 Benchmarks

These are the total scores which must be obtained by each Division to improve on its results of last year:

Div	HF	VHF
VK1	730	213
VK2	4386	148
VK3	3461	7089
VK4	3711	1239
VK5/8	3694	1760
VK6	2374	4066
VK7	1662	918

Receiving Section Rules

1. This section is open to all SWLs in Australia, Papua New Guinea and New Zealand. No active transmitting station may enter this section.
2. Rules are the same as for the Transmitting Section.
3. Only completed contacts may be logged, ie it is not permissible to log a station calling CQ.
4. The log should be in the format shown below.

Example Summary Sheet

Remembrance Day Contest 2002

Callsign: VK3VP
Name: Ian Godsil
Address: 363 Nepean Highway, Chelsea, 3196
Category: HF/Single Operator
Section: Transmitting CW
Total Score: 1000
Declaration: **I hereby certify that I have operated in accordance with the rules and spirit of the Contest.**
Signed: Ian Godsil
Date: 30 August 2002

Example Transmitting Log

Remembrance Day Contest 2002

Callsign: VK1XXX
Category: HF/Multi Operator
Section: Transmitting Phone

Time (UTC)	Band	Mode	Call	Nr Sent	Nr Rcvd	Pts
0801	14	SSB	VK2QQ	58001	59002	1
0802	14	SSB	VK6LL	59002	59001	1
0806	14	SSB	VK5ANW	59003	59001	1
0808	14	SSB	ZL2AGQ	56004	57004	1
0811	14	SSB	VK4XX	59005	59008	1

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Example Receiving Log

Name/SWL Nr: L33071
Category: HF
Section: Receiving Phone

Time (UTC)	Band	Mode	Calling	Calling	Nr	Nr	Pts
0801	14	SSB	VK1XXX	VK2QQ	58001	59002	1
0802	14	SSB	VK1XXX	VK6LL	59002	59001	1
0806	14	SSB	VK5ANW	VK1XXX	59001	59003	1
0809	14	SSB	VK7AL	VK2PS	59007	58010	1

ALARA Contest August 2002

Eligibility: All licensed operators throughout the world are invited to participate. Also open to SWLs.

Object: Participation: YL works everyone, OMs & Clubs work YLs only.

One contest (combined phone and CW) run over 30 hours.

Starts: Saturday 24th August 2002 at 0600 hours UTC

Ends: Sunday 25th August 2002 at 1159 hours UTC

Suggested Frequencies: Bands to be used are 3.5, 7, 14, 21, and 28 MHz only.

The following are suggested frequencies for easier location of contacts:

28.380 to 28.410

21.170 to 21.200 and 21.380 to 21.410

14.250 to 14.280

7.070 to 7.100

3.560 to 3.590

Operation:

- Every individual phone or CW contact may be counted.
- There must be an interval of greater than 1 hour between contacts with any one station on any one band and in the same mode.
- No net or list operations
- No crossmode operations.
- No crossband operations.
- All contacts must be made in accordance with operator and station licence regulations.

Procedure:

Phone: call "CQ ALARA CONTEST"
CW: YLs call "CQ TEST ALARA"
OMs call "CQ YL"

Exchanges:

ALARA member: - RS or RST, serial no. starting at 001, ALARA member, name.

YL non-member, OM or Club; - RS or RST, serial no.starting at 001, name, and whether Club station.

OMs, Clubs & SWLs work YLs only.

Scoring:

Phone: 5 points for each ALARA member contacted
4 points for each YL non-member contacted
3 points for each OM or Club station contacted

CW: Contacts where at least 1 operator is Novice class count double points, otherwise same as phone.

OM, SWL, & CLUB:
5 points for each ALARA member logged:
4 points for each YL non-member logged

LOGS: Single log entry (but Australian YLs entering for the Florence McKenzie CW trophy should indicate their CW score separately). Logs must show date/time UTC, band, mode, callsign worked, report & serial no. sent, report & serial no. received, name of operator of station worked, whether it is a Club station, and points claimed.

Sample Log:

Date UTC	Time UTC	Band MHz	Mode	Callsign	RS(T) & Serial No.Sent	RS(T) & Serial No. Rcd	Name	Points
12/11	0135	28	SSB	VK6DE	59001	58028	Bev	5
	0141	21	CW	VK3KS	599002	599045	Mavis	5
	0600	14	SSB	FK8FA	59025	59011	Aimee	5
	1100	3.5	CW	VK2PXS	599129	599004	Bobbie	10
	1103	3.5	SSB	VK3BSP	59130	59006	Joe (Club)	3

LOGS MUST BE SIGNED. Logs also to show full name, callsign and address of operator, and show final score (points claimed). Logs must be legible. No carbon copies. No logs will be returned. Decision of the Contest Manager will be final, and no correspondence will be entered into.

Logs must be received by the Contest Manager by: 31st October 2002.

Contest manager:

Mrs. Marilyn Syme VK3DMS
99 Magnolia Ave.
Mildura, Vic.
Australia 3500
OR: gdsyme@hotmail.com

Florence Mckenzie CW Trophy:

This will be awarded to the Australian YL operator with the highest CW score (not necessarily an ALARA member). Minimum score 50 points. The actual trophy, because of the size and weight, will not be forwarded to the winner, but a certificate bearing a photo depicting the trophy will be sent to the winner each year.

CERTIFICATES will be awarded for the following:

Top score overall
Top score phone only
Top score Australian YL CW (Florence McKenzie cert.)
Top score ALARA member in each country and VK call area
Top score YL non-member in each continent
Top score OM in each continent
Top score SWL in each continent
Top score VK novice
Top score overseas YL CW
Top score VK Club station

TROPHIES will be awarded to the following:

Top scoring Australian YL
Top scoring DX YL

Club Stations: Operators of Club stations may use the Club call only for contacts, and MUST identify each contact as with a Club station. Use of personal callsigns while operating as a Club member is not permitted.

International Museums Weekend

June 15 & 16

Education Notes

Brenda M Edmonds, VK3KT

Dare we try for a new entry level?

I have written at other times of the move towards a low entry-level amateur licence. There seems to be a general approval of the idea among a lot of the amateur community. If it becomes a way to stimulate and encourage the development of the hobby, it has the potential to make a major difference to the status of amateur radio in the general community.

Great Britain has recently established what they have called the "Foundation Licence". This relies heavily on the students attending a training course and performing a range of tasks under supervision before gaining the licence, and operating under supervision afterwards. The equipment permitted is approved "black box" or approved kit sets.

It has been suggested that we could do worse than just adopting the UK system as it stands. I have a few problems with that suggestion which I would like to be considered.

For one thing, the UK foundation licence requires demonstrated ability in Morse code, not ability to read it, but ability to recognise the letters by reference to a chart. I would prefer it to be a non-code licence. We are all expecting that the WRC 2003 will abolish the requirement for demonstrated competence in Morse code for an HF licence. At that point, the Australian system will go from having five levels of licence to having only two levels. That seems to me to be the time to introduce a new level. Be assured that I am not anti Morse code. There will always be a place for it on the airwaves, but the time has passed for it to be mandatory.

Another problem I see is the need for attendance at a training course. Whilst this is an admirable arrangement, I see difficulties and inequalities for those in remoter areas, ie all those more than 50 km from an amateur radio club. If we are to have such a licence, we need to allow for distance education, either computer or correspondence courses, into which it would be hard to build the close supervision required. The UK course is seen as able to be covered in a weekend although it would make a very intense weekend. I would prefer two or three weekends. Perhaps we need teams of instructors to travel to the country areas to present the course and oversee the examinations all in one go.

Supervision of the new licensee's operating practices and station set-up would be possible in the suburban areas, but would require a number of volunteers. This could be done through the clubs to a large extent, but again the more remote candidates miss out.

Do we have the resources needed to be committed to a new licence level? There will be a heavy requirement for volunteers to assist with the training courses and supervision, and for an examining system to cater for the candidates (assuming there are enough candidates to justify the organisation)

If we intend to try for a new entry level, we need to make an all out effort to increase our recruiting and the community awareness of amateur radio. This entry level is intended to catch the interest of a sector of the community that is interested in radio but does not have the time to spare for or the intellectual desire to understand the complexities of a standard instruction course. It is intended to be a way in, to allow newcomers to sample the joys and satisfaction which we have taken for granted, in the hope that they will be enthused enough to upgrade their qualifications.

There are a lot of details to be discussed, - privileges, callsigns, tenure of licence, as well as the mechanics of the courses. I am interested to hear reader's views, but I am more interested to find out if there is enough goodwill in the amateur community to support the idea and overcome the somewhat pessimistic approach which I have just presented.

nr

Have you thought of helping a *Community Event* with communications?

WICEN in all states helps with communications for safety monitoring, scoring information and general operational reporting.

Examples are the Murray Canoe Marathon, the Australian Rally Championships, Bike-a-thons and Horse Enduros. Lots to choose from and the occasional souvenir.

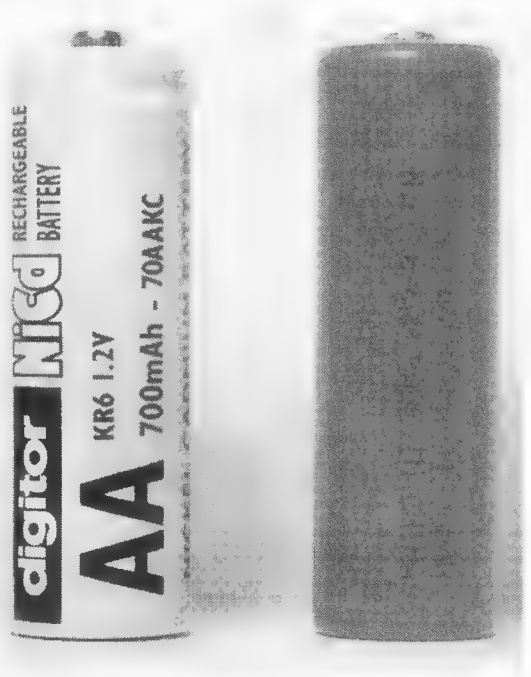
Will McGhie VK6UU
21 Waterloo Cr Lesmurdie 6076
will2@iinet.net.au

Rechargeables

Do you hold the belief that rechargeable batteries are not what they claim to be in terms of capacity? Nickel Cadmium batteries in particular always seem to go flat way short of what you expect. Having had much to do with a variety of batteries, and in particular NiCads in my work situation, NiCads have a bad reputation in my mind. They start off okay but after a few dozen cycles are thrown in the bin.

Memory

Memory effect is a commonly held belief with NiCads. If you don't cycle the cells fully down to flat, then a memory effect takes over and the cells have reduced capacity. This is not true! I have read many articles debunking this accepted belief. One such article appeared in NZART's Breakin many years ago. Research on the Internet turned up many such articles about the memory effect and how it has grown from an effect in an early satellite, to be up there with death and taxes. It was noticed that NiCads in an Earth orbiting satellite that went through a very fixed discharge/charge cycle did appear to have a memory effect. However this was an extreme example of charge for the same fixed time followed by discharge for a fixed time as the satellite moved to the night side of the Earth. NiCads usage back on Earth is far more random than this and a memory effect is not why NiCads appear to have a short life. So what is? I have no figures to back this up, but decades of using NiCads have resulted in the opinion that NiCads can only be cycled for about 50 times before their capacity falls, not the up to 500, or even 1,000 quoted. There are other reasons why NiCads suffer from reduced capacity, such as charging incorrectly causing excessive heating and reverse charging but not memory effect.



Testing

Memory effect aside I still had doubts that brand new NiCads had the stated capacity and have long since abandoned them in favor of Nickel Metal Hydride cells. NiMH cells have become common over the last few years and boast capacities more than twice that of the same size NiCad. A 1,800 mAh AA cell is now available for around $5, which is a serious amount of capacity in an AA cell, provided they actually have that capacity. So I decided to do a capacity test on a NiCad AA and a NiMH AA cell. I chose a brand new 700mAh NiCad and a 1,500 mAh NiMH and discharged each separately at their respective 10 hour rate. So a 70 mAh load was placed on the NiCad and a 150 mAh load on the NiMH.

I was stunned when both cells took 10 hours to go down to one volt, the point at which they would be called flat. The flat point is very obvious in both types of cells as the voltage drops over just a few minutes from just below 1.2 volts to 1 volt. Being a skeptic by nature I had to re-think what I thought about the capacity of these cells. Both cells at their 10 hour rate matched their advertised capacity of 700 mAh and 1,500mAh exactly. How both cells perform over many cycles is far more difficult and time consuming to test but on the simple test I performed I was most impressed.

Included are graphs of the discharge of both cells. They are almost identical with the NiMH starting slightly higher and hence showing a slightly steeper decline, but there is little in their differences.

I still have not changed my opinion on the poor life span of NiCads but when brand new they do have their stated capacity. NiMH cells offer much more in terms of capacity and are of a similar price. Shop around for NiMH cells, as the 1,800 mAh cells can be bought for around $4. This capacity will see your hand held equipment running for considerably longer.

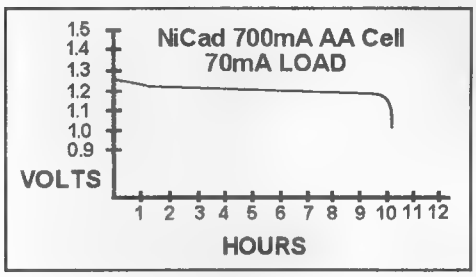


Figure 1

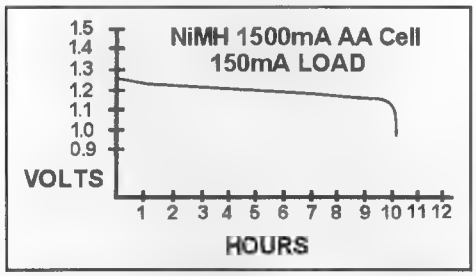


Figure 2

HF Predictions

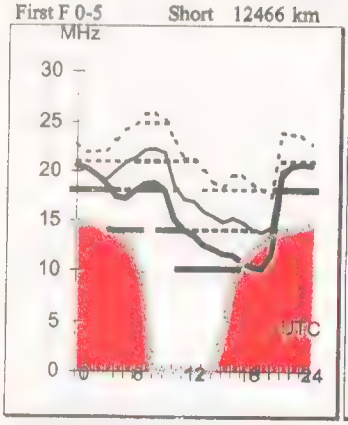
by Evan Jarman VK3ANI
34 Alandale Court Blackburn Vic 3130

These graphs show the predicted diurnal variation of key frequencies for the nominated circuits.
These frequencies as identified in the legend are:-

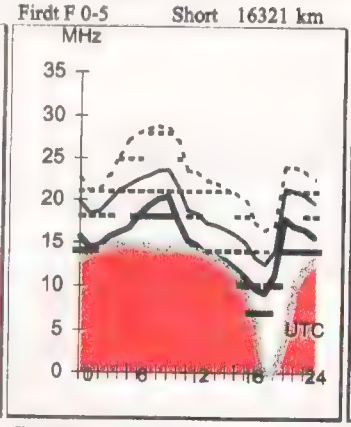
- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

Shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when usable. The path, propagation mode and Australian terminal bearing are also given for each circuit.
These predictions were made with the Ionospheric Prediction Service program: ASAPS Version 4

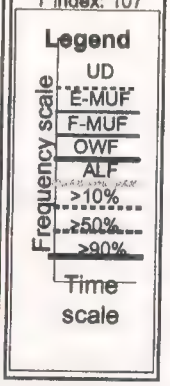
Adelaide-Achorage 30
First F 0-5 Short 12466 km



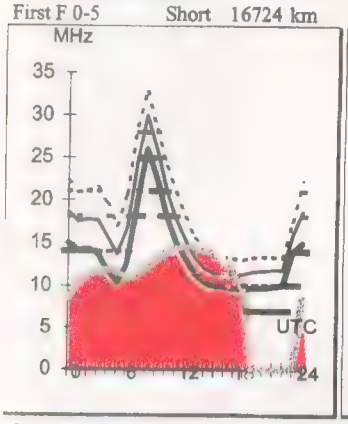
Brisbane-Berne 315
Firdt F 0-5 Short 16321 km



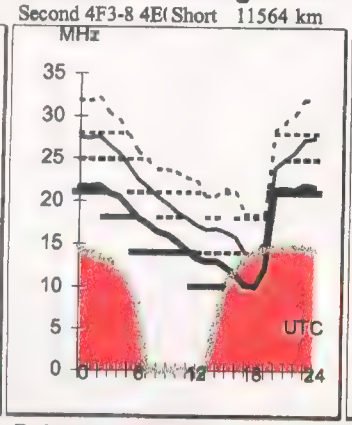
June 2002
T index: 107



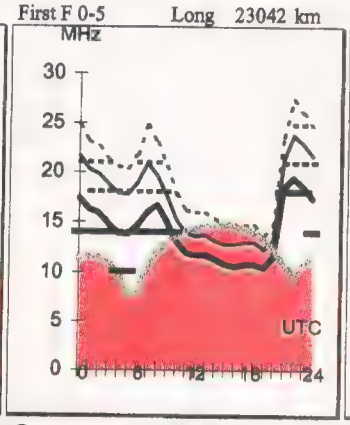
Adelaide-Dakar 233
First F 0-5 Short 16724 km



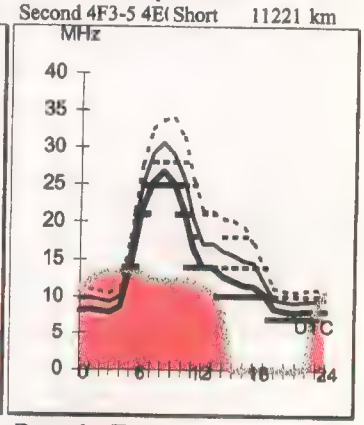
Brisbane-Los Angele 59
Second 4F3-8 4E(Short 11564 km



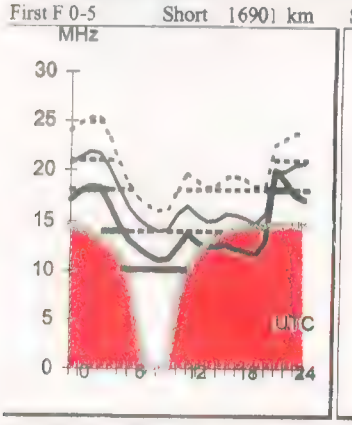
Canberra-London 136
First F 0-5 Long 23042 km



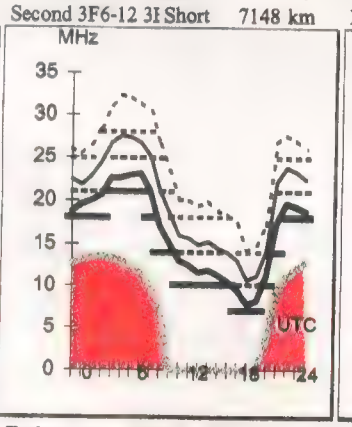
Darwin-Capetown 231
Second 4F3-5 4E(Short 11221 km



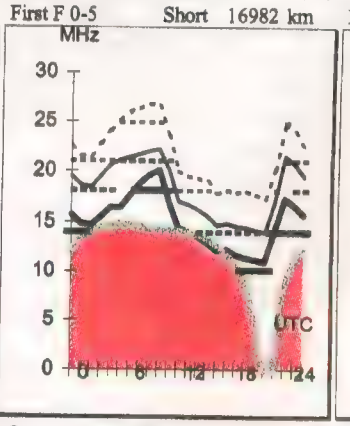
Adelaide-Ottawa 58
First F 0-5 Short 16901 km



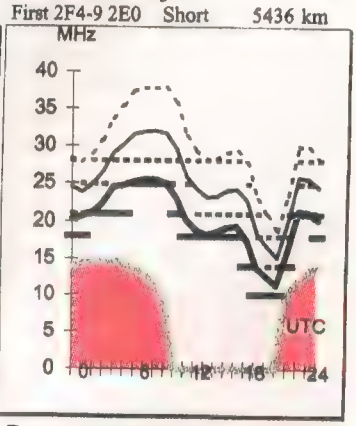
Brisbane-Osaka 344
Second 3F6-12 3I Short 7148 km



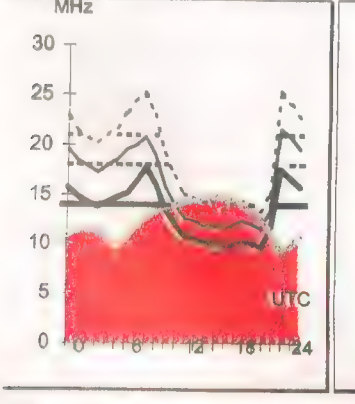
Canberra-London 316
First F 0-5 Short 16982 km



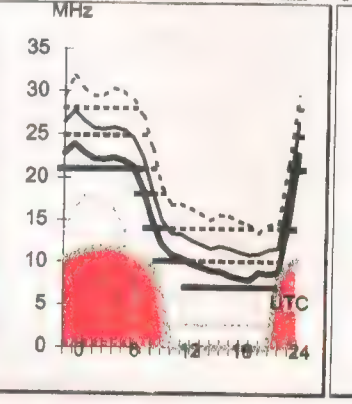
Darwin-Tokyo 10
First 2F4-9 2E0 Short 5436 km



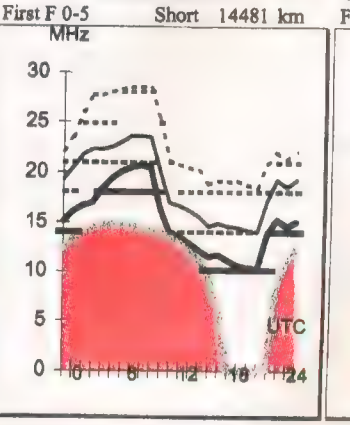
Adelaide-Stockholm 142
First F 0-5 Long 25029 km



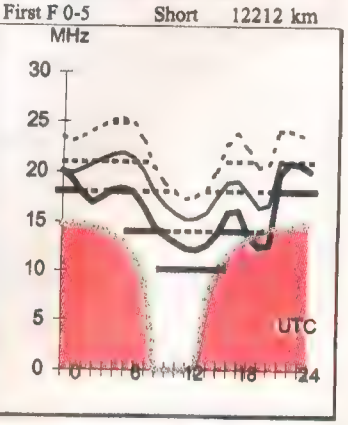
Brisbane-Singapore 293
Second 3F9-12 3I Short 6146 km



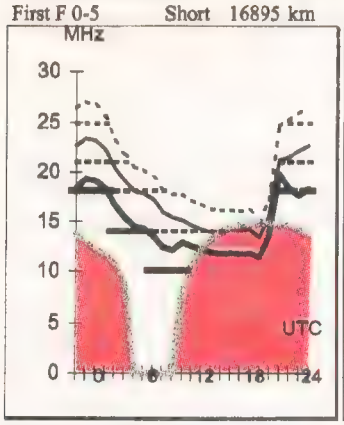
Canberra-Moscow 317
First F 0-5 Short 14481 km



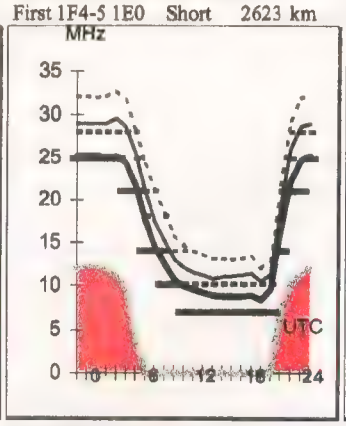
Darwin-Vancouver 42
First F 0-5 Short 12212 km



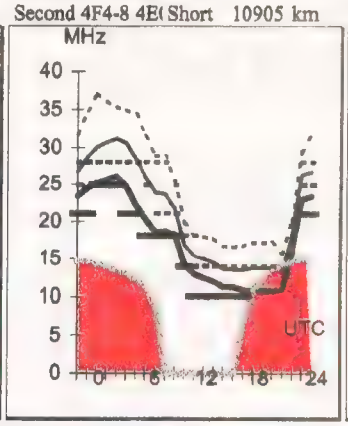
Hobart-Boston 78
First F 0-5 Short 16895 km



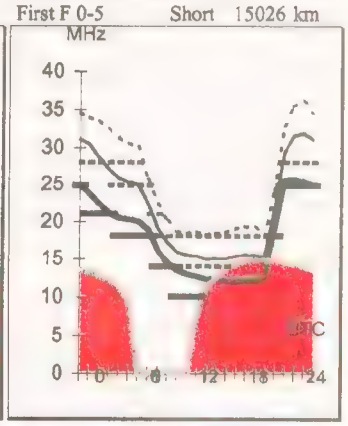
Melbourne-Auckland 97
First 1F4-5 1E0 Short 2623 km



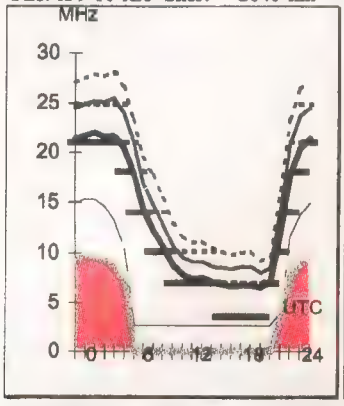
Perth-Honolulu 70
Second 4F4-8 4E(Short 10905 km



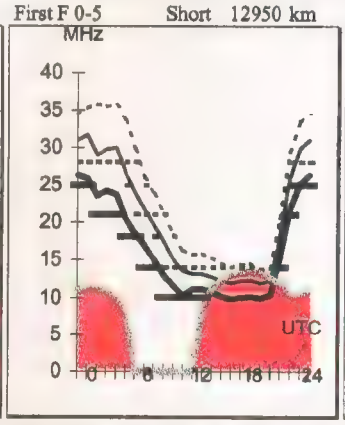
Sydney-Miami 86
First F 0-5 Short 15026 km



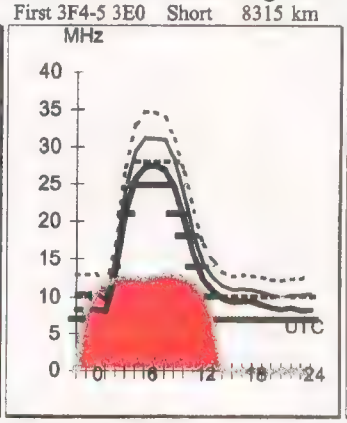
Hobart-Christchurch 101
First 1F9-10 1E0 Short 2040 km



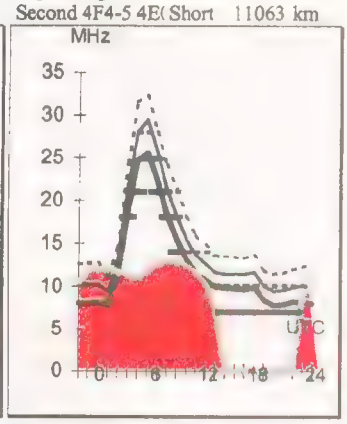
Melbourne-Lima 133
First F 0-5 Short 12950 km



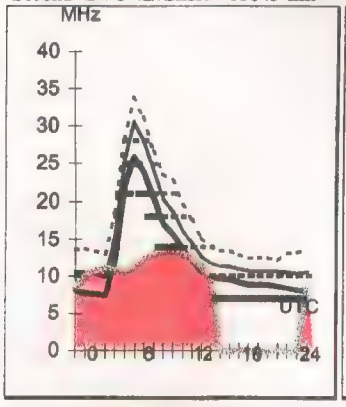
Perth-Johannesburg 248
First 3F4-5 3E0 Short 8315 km



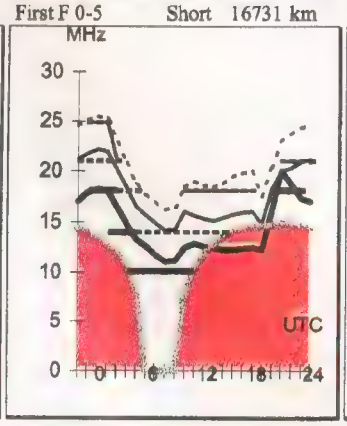
Sydney-Pretoria 230
Second 4F4-5 4E(Short 11063 km



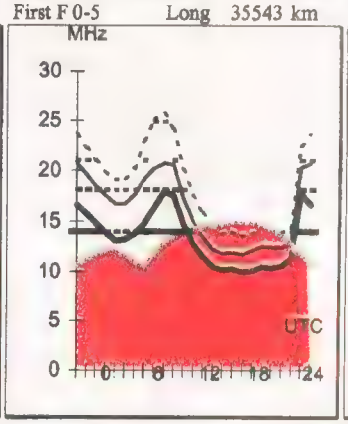
Hobart-Lusaka 239
Second 4F4-5 4E(Short 11045 km



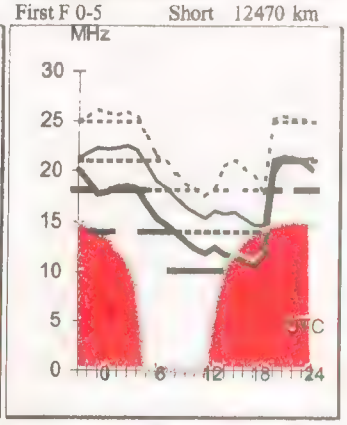
Melbourne-Montreal 62
First F 0-5 Short 16731 km



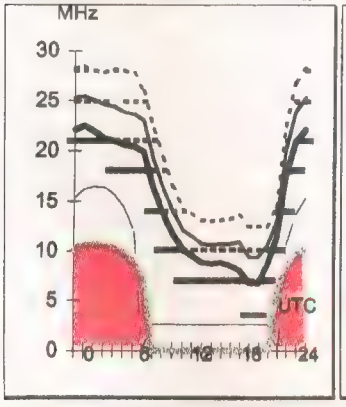
Perth-London 133
First F 0-5 Long 35543 km



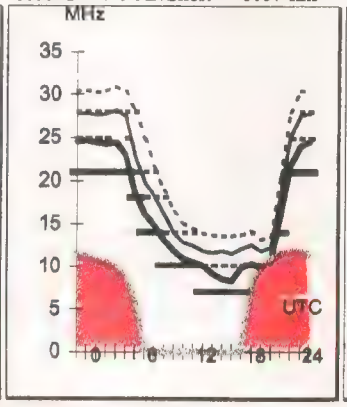
Sydney-Seattle 47
First F 0-5 Short 12470 km



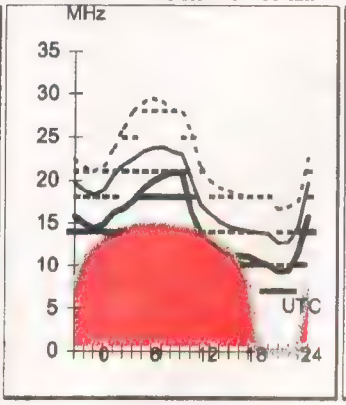
Hobart-Port Moresby 360
Second 2F10-12 2 Short 3710 km



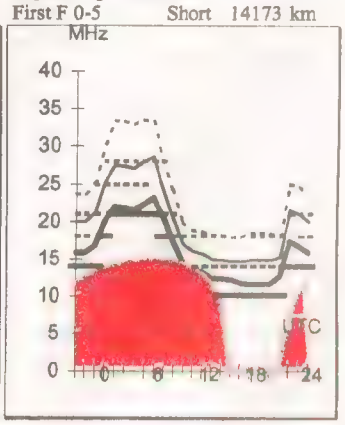
Melbourne-Papeete 90
Second 3F7-9 3E(Short 6687 km



Perth-London 313
First F 0-5 Short 14481 km



Sydney-Tel Aviv 287
First F 0-5 Short 14173 km



VHF - UHF

AN EXPANDING WORLD

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All times are in UTC.

VHF Activity

Bevan VK4CXQ reports on 6 metre activity from Townsville mid April to mid May 02. Such as it is, it is quieter than April! The only activity on a regular basis was the JAs but if you were slow off the mark you missed out there also. The only area of reasonably consistency was the Pacific but it wasn't very good. Worked a YB5 and a DU. A HP2 turned up and I heard a TI, TG, 9V1, VU2, 9M6, FK8, AH7 and ZLs neither of these stations were around for long. A VR2 has just faded out after five minutes. The only bright note was a QSO with K1B Baker Is (the call had me tossed for a while) 73 Bevan VK4CXQ

David VK3ANP reports. ...Allan VK3PA has taken over the 6 m beacon formerly run by Steve VK3OT. He intendeds to have it set-up so you can send a CW sig to the beacon on its freq. during the end of a cycle and have it logged. He intends to have it at his QTH near Bendigo. Lots of interest in JT44 with many contacts being made around the state and into Mt Gambier using 2 m.Have almost had a contact on 432 with VK3KQB using JT44. Brian saw me but I could not decode him. SSB non-existent at the time.

Having regular daily contacts on 6 m with VK7MO using Hell, FSK441 and VFSKCW. This is an approximate 750km path for me to Rex. Also participating are Ian VK3AXH and John VK3ATQ at lesser distances to Rex ... David VK3ANP.

Sporadic Es

Brian, VK3BCZ, reports: Following on from your closing comments in the March column about the decline in 50MHz (and 144/432 MHz) reports over the last few years, I would like to make a plea for reinstating the monthly reports of occurrences of Es in Australia. This, of course, cannot be done without contributions from readers of AR. (We can surely expect some winter time openings in June/July.)

Subsequent to my retirement last year, I have resumed researching the causes of Es after a break of about 40 years!

As a result of doing a search on the Internet, I have discovered that there is still no reliable predictor of the onset of Es in temperate latitudes, despite some excellent research by professionals (who are mostly also amateur radio operators) particularly here and in the USA. Three or four likely factors have been closely investigated and shown to be relevant, but no single factor seems to be relevant in the case of Es in temperate latitudes. A combination of factors seems more likely.

I was somewhat dismayed to find that there were generally many more logged occurrences in the amateur magazines 50 years (and even ten years) ago than there are now. Also it is obvious that the reporting of the fairly regular openings to Europe has taken centre stage in the columns of AR.

In discussion by email with overseas amateurs and researchers, I have found that currently there is a great need for data from the Australian region. Data of the 60s from my logbook has so far produced interesting daily correlations with the data of Dyer-Pocock (in QST magazine). We have been attempting to correlate the annual meteor shower trails, which should reoccur on the same day each year with the days on which Es has been observed. But much more remains to be done on this factor and on the other factors. Here is a chance for amateurs who are widely dispersed across Australia to contribute yet again to the scientific understanding of our wonderful ionosphere.

Reports of Es from the months of February to November would be particularly useful, as would any reports of Es via backscatter. ... Brian VK3BCZ

I concur, the interest in the E layer whether that is Es or Scatter has been boosted by a number of factors (WSJT & JT44 being just one area). I welcome this input no matter how minor.

Digital

Rex VK7MO reports on his portable activity from VK7 on the 4/5th of May 2002 ...QSOs were made from all 5-grid squares visited (QE27 near Queenstown, QE28 Chasm Creek, QE29 Stanley, QE39 Tomahawk & QE49 near Gladstone). Meteor scatter contacts were primarily to Sydney - thanks to Mike VK2FLR and Adrian VK2FZ. I was too close to VK3 for meteor scatter but did make some contacts on tropo, thanks to Barry VK3BJM and Ian VK3AXH. Dale VK5DC was seen and tried valiantly - we nearly made it from QE29, but I did not get a final RRR.

There were some problems which would have made things difficult for people at the other end, eg keeping the battery charged, noise from the genset, noise from Channel 5A in QE28 and QE29 and equipment failure which was fixed courtesy of VK7JG - thanks Joe.

Noise Floor: The vast majority of MS signals are weak under dense pings of less than 6 dB above the noise in a quite location. Thus it necessary to select locations with no more than a few dB noise floor. WSJT makes it easy to measure the noise level and you can compare the noise through the antenna to that in a dummy load. Noise floors were 18 dB near Wynyard, and 9 dB near Burnie due to Channel 5A TV at Table Cape. The solution was to hide at the side of the Nut (a volcanic formation) at Stanley to work from QE29 and to hide in a Valley facing North at Chasm Creek to work from QE28.

In further news, Congratulations go to Neil, VK2EI, on working Bob, ZL3TY, on FSK441 over a distance of 2028 km - a new Australian 2 metre digital record.

John, VK4FNQ, Charters Towers, joined the group last weekend 18/19th of May) and will be looking for contacts during the activity sessions this weekend on 144.230. He should be in range of VK2/3/5.

Gordon, VK2DJG, Armidale, is

Continued on page 52

Spotlight on SWLing

by Robin Laird Harwood VK7RH

It is midwinter here and it is truly amazing how different reception can be from adjacent locations. For example, Radio Bucharest International in Rumania was easily heard at my old QTH at Newstead on 17815 at 0200z although here in the adjoining suburb of Norwood I was not able to hear it. The station is in English yet their pronunciation and overall presentation is extremely poor.

The International situation rapidly escalated at the end of March, following several terrorist actions within Israel that saw the Israelis launch a huge retaliatory military action on the West Bank. This action, coming just at the time of Easter/ Passover, dramatically heightened tensions throughout the Middle East and beyond.

Just prior to this, the US Government launched its Middle Easter Radio Network to broadcast ' pro-American' programming, particularly targeted to those under 30. It commenced via FM transmitters in Kuwait and Bahrain and hope to add other FM senders in nearby "friendly" states. However, following the huge reaction in many of these to the Israeli incursion into the West Bank, I would expect that these states could be wary of allowing this US backed station, known as "*Radio Sawa*", to broadcast on FM. The use of shortwave is a distinct possibility but HF propagation does not broadcast music very well. Apparently they are hoping to woo their listeners by playing American pop music, which is rarely broadcast over Middle Eastern stations.

This 24-hour Arabic network aims is to influence a sizeable audience by subtly putting over the American position of the current Middle East crisis and the ongoing "war on Terrorism". They aim to do this by playing current American and Arabic pop music, interspersed with frequent news bulletins, opinions and commentary. This new network is designed to counter the rise of the Arabic television networks such as the one in Dubai, known as *Al Jazeera*. I believe also a companion Arabic television network to R. Sawa will shortly be operational.

Naturally this has angered several Islamic nations, especially since the Israeli invasion of Palestine early in April. American pop music or culture is rarely heard over the existing Middle Eastern media with the possible exception of Lebanon. Radio Sawa is currently relayed over FM in Bahrain, Kuwait and Jordan while others are lukewarm to its broadcasts being relayed within their countries. R Sawa replaces existing Arabic programming over the VOA.

In late March /early April, tensions in the Middle East completely spilled over into all out conflict. Israeli troops stormed into areas that had been controlled by the Palestinians, resulting to an increasing casualty toll and damaged infrastructure. All Palestinian media outlets were systemically destroyed as the Israelis were determined to prevent independent coverage of the raging battles. Even the international media came under attack if they got too close to the battle zones.

The war of Words quickly spread to shortwave and satellite. Because the Palestinian leadership were scattered or besieged, the only way they could get their messages back to the population was via shortwave from sympathetic Arab neighbours. Palestine strikes an emotional cord to most Arabs, transcending political rivalries or systems.

As I have been reporting, the Israeli Government decided to abandon shortwave broadcasts of Kol Israel for budgetary reasons. Programming was going to be exclusively streamed via the Internet. This resulted in a predictable outcry from the Jewish Diaspora as well as from listeners worldwide, many having little or no Internet access. A reprieve was granted until July, yet as is often the case, the current situation made shortwave radio indispensable.

There was another sticky situation when the Americans decided to commence their broadcasts to the Caucus region, particularly to Chechnya, after initially postponing it on diplomatic advice. The Russian Government and media became very hostile to what they perceived to be interference in their internal affairs by Radio Free Europe specifically broadcasting in the Chechen language, which is spoken by the rebels fighting against the Russians. Moscow accused Washington of double standards in their war against terrorism as the Chechen rebels have strong links to the Al Quayeda and Usama Bin Laden. The result is that Moscow will closely monitor the RFE Chechen broadcasts to "correct" any perceived bias or support to the rebels yet will not ban RFE broadcasts being currently aired over domestic stations in Russians. The Chechen programs are naturally not being aired domestically but over shortwave.

There is a clandestine broadcasting station emanating from of all places New Zealand. The station is the Democratic Voice of Burma. The schedule is 1430 to 1530 UTC on 15620 kHz. Programmes originate from the DVB studios in Oslo Norway. This is the first time I have heard of New Zealand allowing their main shortwave transmitters to be used in clandestine broadcasting. 15620 is a non-standard channel and the transmitters located near Lake Taupo, are usually used for Radio New Zealand International. The Democratic Voice of Burma is aired via the Norwegian senders at Kvitsoy earlier and is the program of the Democracy Movement and their Nobel Peace Prize leader Aun Sun Suu Kye, who was recently released from house arrest.

I wonder if the new country of East Timor will be coming up on shortwave. I well remember hearing the former Portuguese colony prior to the Indonesian invasion within our 80-meter amateur allocation on 3680 kHz. It was spasmodic and often came to the attention of the Intruder Watch Co-ordinators in the early seventies.

The future of the Internet as an audio streaming source was also brought into

Continued on page 52

question, by a completely unrelated court decision. Following the Tapster case, where the record companies successfully shut down a commercial file-swapping program that allowed consumers to download the latest records without paying for them. Napster then tried to go to a subscription base but so far it has not been able to get up and running as substantial damages were awarded.

Also the Recording companies, particularly through their trade organisation, also won the right to get Internet streaming stations to pay for copyright on music played. The Internet has seen the proliferation of independent program makers and enthusiasts instead of commercial organisations compile many of these. If the proposed copyright fees were enforced, many of these independent audio streams would cease, as they could not afford to pay the annual copyright fee. I should emphasize that this only applies to North America at this stage. We could see independent audio streams appearing from other jurisdictions.

Late in April and early in May, there were experimental broadcasts in the digital broadcasting beamed to Melbourne and Sydney. Senders in Sackville, Juelich and Bonaire took turns to use the DRM platform to gauge its usefulness in this region. There are no commercial or even amateur receiving DRM receivers or software available so it leaves me wondering if DRM will become a white elephant.

ECUADOR. HCJB on the Move. Ecuador-based international missionary broadcaster HCJB is preparing to relocate its current shortwave site from Pifo to the Santa Elena peninsula. The station has just released details of the move, what's planned, and the projected timetable. Also HCJB-Australia won their appeal against a ruling of the local shire Council, over their proposed Kununurra site. Work has already commenced and they are hoping to be on-air in December of this year. Once this is operational, I believe that HCJB in Quito will no longer broadcast to this region and instead will use the Western Australian senders to target the South Pacific. The move from Pifo is because a new international airport for Quito is being built there. The new site is closer to Guayagil, on the western coast of Ecuador and at sea level, compared to being high up in the Andes mountains at Pifo.

Well that is all for this month. Don't forget you can email me at vk7rh@wia.org.au or snail mail at 20/177 Penquite Road, Norwood TAS 7250.

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VHF/UHF.AN EXPANDING WORLD continued

operational but has a high noise level on 144.230 due to a channel 5A TV station nearby. He prefers to work 144.330 and thus it is best to make a specific sked with him. Doug, VK3UM, has drawn attention to a very useful free program for keeping your computer on time at the following address: http://www.softnic.com/products/timesync/

ZL3TY can be seen most mornings on 144.230 from 2000 to 2100 UTC. While he is beaming Sydney signals can be seen as far South as Hobart. There is a new version of WSJT available, version 2.0.1, which has minor maintenance improvements compared to 2.0. It can be accessed at: http://pulsar.princeton.edu/~joe/K1JT/ .. 73s Rex VK7MO

In closing

Apologies for the briefness of this column, you can be assured that it is not so much because of lack of information but simply a lack of time this month! In the past few weeks, my base of work has moved to Melbourne. The resultant travel (I'm still living in Adelaide) and shortened weekends has limited the column preparation time this month. Next month hopefully things will be a bit more balanced.

In an adjacent panel, you will find the May 2002 updated "Grid square League table" contributed by Guy, VK2KU.

I'll leave you with this thought.. "Success is knowing the difference between cornering people and getting them in your corner"

73s David VK5KK

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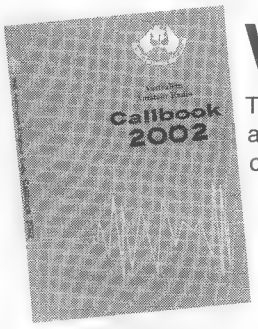


WIA Callbook

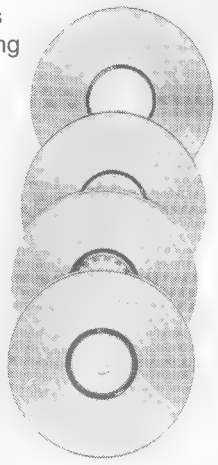
This year's callbook is a shortened version containing only the VK call signs and little peripheral information. Its price reflects its shortened format by being considerably less at $15.00 (plus postage and handling).

or

Callbook on searchable CD Rom

Order through your local Division

contact details on page 56



Australian Foundation Licence

The Foundation Licence needs to allow all modes and Amateur frequencies above 400 MHz.

I suggest a licence that allows the use of pre-built radio equipment both commercial and amateur built, with a power limit of 10 watts into the antenna.

I see no logic in restricting the Foundation Licence holders to a limited number of modes if they can use a greater number on some of the very same frequencies without a personal licence. What we can provide is training and extended privileges.

An Amateur licence that will provide an incentive for users of the class licenced LIPD and ISM bands would attract a VERY large number of people. From one Brisbane Internet mailing list alone we could attract over 1000 students for a shortened radio-training course. The number of computer users interested in setting up wide area networks using radio frequencies in Australia easily outnumber existing Radio Amateurs.

Very few if any of these students would be initially interested in HF frequencies or modes other than data, it would therefore be a complete waste of time offering HF privileges in any foundation licence.

If we lower the WIA membership fees at the same time as new foundation licence is introduced we will greatly increase the membership. A membership fee of $25.00 should be more than ample to cover the running on the Institute.

Explanation

FM hand held LIPD radios are now sharing the Amateur 70 cm band along with other LIPD devises using a variety of modes. We are sharing other Amateur bands such as 2.4 GHz with class licensed users that make use of a variety of modes including Spread Spectrum, narrow and wide band FM, FM and AM TV.

Why not take advantage of the modern equipment available rather than trying to restrict new Amateurs to antiquated modes that many do not wish to use.

Comment

There are now a large number of computer users setting up radio networks using the shared amateur bands of 2.4 GHz and higher. These radio experimenters (amateurs) are putting the majority of Licenced Radio Amateurs to shame by building and installing antenna and repeater systems (nodes) and other equipment.

These radio experimenters are the new Radio Amateurs; we can either work with them or continue to fade away while they increase in number.

Alan VK4YAR

References

QDG Inc. wireless LAN page http://homepage.powerup.com.au/~qdg/qdgwire.htm

Radiocommunications Class Licence (Spread Spectrum Devices) http://www.aca.gov.au/legal/licence/class/spread.htm

Brisbane Mesh http://www.itee.uq.edu.au/~mesh/

Alan Wills VK4YAR
vk4yar@powerup.com.au

GippsTech 2002 Conference

Churchill, July 6 and 7

The fifth annual Gippsland Technical Conference (GippsTech) will focus on issues relating to VHF, UHF and microwave frequencies and their uses for amateur communications. Plans are for technical sessions during the day on Saturday and Sunday morning, including a BBQ lunch on both days. Pauline Corrigan is once again planning a full weekend of activities for accompanying partners.

The social program includes dinner on Saturday evening at Café Gaztronomy in Morwell. Cost: $35 per person, BYO drinks. Please register via the VK3BEZ web site prior to June 28.

Topics identified to date include:

- Using JT44 for tropospheric and EME propagation. (VK2FLR)
- WSJT meteor scatter experiences. (VK7MO)
- Integration of a 1W 10GHz PA with a 650mm offset fed dish. (VK2EI)
- System integration with the Milliwave power amplifier at 24GHz (VK2EI)
- The VK3UM 10 metre dish installation: A pictorial presentation of the installation from start to finish including the mount, drives, tracking and feed systems. (VK3UM)
- RF Radiation: Does your Station meet the new licensing assessment requirements? Obtaining a High power permit. (VK3UM)
- Transmission line fault finding using a simple homebrew TDR. (VK3ZRX)
- The trials and tribulations of running a basic VHF-UHF station. (Bob VK2TG)
- Basic testing techniques at UHF and above. (Peter ZL1UKG)
- Solving noise problems in modern radio systems. (Bryan VK3YNG)
- Human speech acoustics and the factors affecting speech intelligibility. (John VK2TK)

Further details can be found at the VK3BEZ web site at http://www.qsl.net/vk3bez/. Anyone willing to contribute further topics for the program should contact the Chair of the organising committee, Peter VK3KAI, at vk3kai@qsl.net.

HAMADS

- Hamads may be submitted by email or on the form on the reverse of your current Amateur Radio address flysheet. Please print carefully, especially where case or numerals are critical.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at $25.00 for four lines (twenty words), plus $2.25 per line (or part thereof), with a minimum charge of $25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of Amateur Radio, at:

Email: *newsletters@ozemail.com.au* **Fax:** *03 9756 7031*
Postal: *Newsletters Unlimited, PO Box 431, Monbulk Vic 3793*

Please send your Hamad by ONE method only (email preferred)

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• KENWOOD TS-950S SN 0110087 integral PS-150W output. Dual freq. Receive, narrow SSB filter. Great DX performer $1700. See it operating. Phone Les VK2CLB Phone 02 9997 1109 or e-mail vk2clb@ bigpond.com

• BOOKS from the estate of George Schulze VK2GX. All books are in good condition. RADIO AMATEUR'S HANDBOOKS - years 1947, 1962, 1979 and 1984. RADIO HANDBOOK - ninth edition - by Editors and Engineers - 1942. Wireless Institute of Aust - AMATEURS CALL BOOK 1981-82. SSB AMATEUR SINGLE SIDE BAND - Collins Radio Co. 1962. PRACTICAL RADIO COMMUNICATIONS by Nilson and Hornung, 1935. HEATH KIT HANDBOOK - Assembling and using your Variable Frequency Oscillator, Model VF1. RADIOTRON DESIGNER'S HANDBOOK - 3rd Edition - small book - 1944. RADIOTRON DESIGNER'S HANDBOOK - 4th Edition - red cover in 'mint condition' 1953. ADMIRALTY HANDBOOK OF WIRELESS AND TELEGRAPHY Vol 1 - Magnetism and Electricity - 1938. BENDIX INSTRUCTION BOOK for models RA-B, RA-11 and RA-IJ. Aircraft Radio Receiving Equipment. Please make offers to Vic, Fax 02 9876 5232

• ATN LOG PERIODIC ANTENNA, Model No. 20-30-6L+ 6 metres; 6 m. Boom, 6 elements suits 15/12/10/6 m. bands; 8.5 dbi forward gain; turning radius 4.6 m.; longest element 7.5 m, An excellent antenna with instructions; includes 2kW. Balun, all stainless hardware, $300. John. VK2JJS. QTHR. Phone 02 9498 2248.

• Waverley Amateur Radio Society is holding an AUCTION OF RADIO AND ELECTRONIC EQUIPMENT at 11:00 on Saturday June 22nd at its clubhouse in Vickery Avenue, Rose Bay. All are welcome to buy or sell. Pre-registration and further details can be found on the web site at www.vk2bv.org or phone Simon, VK2UA, on 02 9328 7141.

• PRC-10 complete in EWO, with accessories, $175 ono. Spares available. Brian VK2GCE QTHR Phone 02-9545 2650 or [preferred] brianclarke@idx.com.au

• WARBIRD DISPLAYS: Rxs, Txs, modulators, racks, mounts, remotes, some complete COMMAND setups as used in WWII operations. Brian, VK2GCE, Phone 02 9545 2650 or [preferred] brianclarke@idx.com.au

• YAESU FL-2100Z amplifier, VGC. Retirement village problems. $800. A G Cory VK2DTH Phone 07 4676 3153

WANTED NSW

• PRC-9 or 10 cases - need three; can swap for two PRC-9A cases. Brian, VK2GCE, Phone 02 9545 2650 or [preferred] brianclarke@idx.com.au

• INFORMATION AND EQUIPMENT FOR AMATEUR TELEVISION - 90cm preferred but interested in 23 cm equipment. David Hunt VK2IX QTHR Phone 02 4751 6124

• JAYCAR 12V GEARED MOTOR approx 4 inches long 1 1/2 inches diameter with a 20:1 reduction, sold as surplus stock 5 to 6 years ago. Required for project. Chris VK2YMW Phone 02 9487 2764 AH

FOR SALE VIC

• WARBIRD DISPLAYS: Rxs, Txs, modulators, racks, mounts, remotes, some complete COMMAND and RADAR setups as used in WWII operations. Bill, VK3AQB Phone 03 9337 4902 or jikajika@net2000.com.au

• New offcut lengths ANDREWS HELIAX LDF450A, LDF550A, 16 m – 44 m. Also connectors. Ray VK3ATN QTHR Phone 03 5492 2224, Fax 5492 2666, atnant@ruralnet.net.au

• YAESU FT-101E with service manual and new finals $250. AUTOMATIC KEY, make unknown. Barry VK3JB QTR Phone 03 9878 8275

• KENWOOD TS-520 transceiver, manual, spare 6146s, microphone, DC lead, S/N 120472. Good condx $280. TRANSVERTER 70cm all mode microwave modules, model MMT432/28S S/N T432/285 6801920. Good condx $80. BANDIT triband quad hub cast aluminium. Never used $50. David VK3ANP QTHR Phone 03 5727 6218

• DECEASED ESTATE: Two metre SWISS QUAD with 70cm. 16 ELEMENT YAGI controlled with horizontal and vertical rotators, controllers, coax and cable $310 obo. ICOM 751A HF transceiver and PSU $950 obo. Telescopic antenna mast, fascia/ground mounting approx 13 metres with hand winch, Stolle rotator, controller and cable $300 obo. DAIWA TWO-METRE LINEAR amp and power supply $280 obo. LINEAR AMPLIFIER HF with spare tubes $320 obo. CHIRNSIDE TRIBAND HF beam antenna with coax $110 obo. LINEAR AMPLIFIER UHF $80 obo. Five position B & W COAX SWITCH $60 obo. Lawrie VK3DFE QTHR Phone 03 9807 3995

• ELECTRONICS AUSTRALIA, 1939-2000, AMATEUR RADIO 1970 and on, PRACTICAL WIRELESS 1970-90, PRACTICAL TELEVISION 1970-90. Collection of others. No reasonable offer refused. Will not separate titles. VK3ZIC Phone 03 9336 7837

• ICOM IC-R7100 VHF/UHF receiver as new with original carton & manual $800. MALDOL LP-1300 log periodic yagi 100-1300MHz (DSE cat D4828) $150. WELLBROOK ALA1530 active loop antenna (RX only) $150. These antennas are fully assembled and therefore difficult to transport, so prefer Melbourne area (Tullamarine or Woodend) pickup. Damien VK3RX Phone 03 5427 3121 vk3rx@wia.org.au

• BOOK: "Heathkit - Your Guide to the Amateur Radio Products" $30 New condition. Damien VK3RX Phone 03 5427 3121 vk3rx@wia.org.au

• ICOM IC-7QA, dual band 2/70, handheld transceiver, brand new, $250. ICOM IC-551 6m all mode transceiver with 130 watt valve linear $275. DIAMOND D-130J discone antenna 25-1300MHz Brand New $150. COLOUR TV 15cm 12VDC-240VAC with AV input, tunes 440 ATV $200. Ian McDonald VK3AXH QTHR Phone 03 5341 3012, e-mail igm@netconnect.com.au

WANTED VIC

• YAESU FT-225R 2m all mode transceiver in VGC & GWO Damien VK3RX Phone 03 5427 3121 vk3rx@wia.org.au

• COLLINS AM transmitter Type 32V-1 or 32V-2 or 32V-3. Will pay top price for original unit. Roy VK3ARY QTHR Phone 03 9803 1213 or vk3ary@melbpc.org.au

• RADIO NAVIGATOR as operated/used in Avro Anson aeroplane Type R1155 or parts for restoration. All costs paid. Phone 03 5332 2340 Stan VK3SE

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• YAESU digital VFO with handbook $75. Paul VK4DJ Phone 07 4778 6031

• YAESU FRG-7 receiver 0.5-29.9MHz AM/SSB/CW, with original manual. In daily satisfactory use for Ham and BC, some signs of long use on casing. $150 ono. Hans L40370 (exHS1ALK), Phone 07 5479 4561, email: hpkiesinger@ozemail.com.au

WANTED QLD

• IC-720A, dead preferably for parts. Stuart VK4KKQ 07 4972 9871

• COLLINS 32S1/2/3 transmitter, prefer with 516F-2 ac power supply. John VK4VK QTHR Phone 07 5538 1759 E-mail: tenalu@dodo.net.au

• COPY of KENWOOD MC-60 Desk Mike SCHEMATIC. Gladly pay for copying and postage. John VK4VK QTHR Phone 07 5538 1759 Email: tenalu@dodo.net.au

• YG-455C CW Filter for Kenwood/TRIO R-2000. Phone Hans L40370 Phone 07 5479 4561 e-mail: hpkiesinger@ozemail.com.au

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• 28 Ah 12 volt "DRY-FIT" SEALED GEL-CELLS $20.00. Large (car battery sized) perfect for portable operation or float charging in the shack. The South East Radio Group VK5SR in Mount Gambier have a number of these batteries for sale. All are charged and tested OK. Any unsold will be available at Mount Gambier Convention in June. Contact Kevin VK5KJ vk5kj@austarnet.com.au or Mobile 0407 799 664

WANTED SA

• BANDSWITCH for early model FL-2100 Yaesu Linear Amplifier (SW1a/b). (80m contacts vaporised). Would consider scrap or defunct amp. Kevin VK5KJ vk5kj@austarnet.com.au or Mobile 0407 799 664

• GRANGER ELECTRONICS (portable) HF SSB transceiver. Malcolm Haskard VK5BA QTHR Phone 08 8280 7192 email malcolm.haskard@unisa.edu.au

• N TYPE CONNECTORS (2) for Bird Wattmeter Type 43 part number 4240-062. Colwyn Low VK5UE Phone 08 8255 2138 e-mail cmlow@chariot.net.au

FOR SALE WA

• KENWOOD TS-520 HF transceiver s/n 010414 with MC-50 mic. 2 m amp QM75 144 PA50 s/n3514. ICOM IC-280 2m s/n03035. FDK multi 7, 2m s/n65128. REALISTIC TRC-415 CB s/n0019532. BC-459A transmitter s/n53303. VALVE TESTER Galstan 223A. Jim VK6CA Phone 08 9622 2804 e-mail vk6ca@dodo.com.au

WANTED WA

• CIRCUIT DIAGRAM and/or component layout for Sharp Radio tape recorder Model GF 5454Z VK6FD, QTHR Phone 08 9362 1170

• DRAKE T4XC/R4C HF transmitter/receiver combination. Also would be interested in T4XB/R4B or separate T4XC and R4C. Suffering from a bad nostalgia attack and want to put together 1970s-style CW station like I used to have. Steve Ireland, VK6VZ. Phone: 08 9298 9330 or e-mail: sire@iinet.net.au

• AUTO ANTENNA TUNER to use with ICOM IC-720 Jim VK6CA Phone 08 9622 2804 e-mail vk6ca@dodo.com.au

MISCELLANEOUS

• The WIA QSL Collection (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose Vic 3765, tel. (03) 9728 5350

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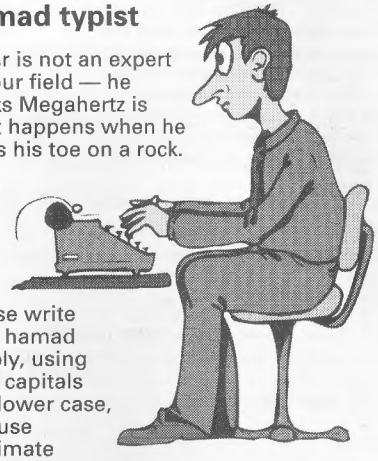

To help Oscar, please write your hamad legibly, using both capitals and lower case, and use legitimate abbreviations.

This will reduce the chance of errors being published, which incoveniences everyone.

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Division Directory

The Amateur Radio Service exists for the purpose of self training, intercommunication and technical investigation. It is carried out by amateurs who are duly authorised people interested in radio technique solely with a personal aim and without pecuniary interest.

The Wireless Institute of Australia represents the interests of all radio amateurs throughout Australia. National representation is handled by the executive office under council direction. There is one councillor for each of the seven Divisions. This directory lists all the Divisional offices, broadcast schedules and subscription rates. All enquiries should be directed to your local Division.

VK1 Division Australian Capital Territory,
GPO Box 600, Canberra ACT 2601

President	Gilbert Hughes	VK1GH
Secretary	Peter Kloppenburg	VK1CPK
Treasurer	Linden S Orr	VK1LSO

VK2 Division New South Wales
109 Wigram St, Parramatta NSW
(PO Box 432, Harris Park, 2150)
(Office hours Mon-Fri 1100-1400)
Phone 02 9689 2417
Web: *http://www.ozemail.com.au/~vk2wi*
Freecall 1800 817 644
e-mail: *vk2wi@ozemail.com.au*
Fax 02 9633 1525

President	Terry Davies	VK2KDK
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Treasurer	Chris Minahan	VK2EJ

VK3 Division Victoria
40G Victory Boulevard Ashburton VIC 3147
(Office hours Tue 10.00 -2.30)
Phone 03 9885 9261
Web: *http://www.wiavic.org.au*
Fax 03 9885 9298
e-mail: *wiavic@wiavic.org.au*

President	Jim Linton	VK3PC
Secretary	John Brown	VK3JJB
Treasurer	Barry Wilton	VK3XV

VK4 Division Queensland
PO Box 199, Wavell Heights, Qld. 4012
Phone 07 3221 9377
e-mail: *office@wiaq.powerup.com.au*
Fax 07 3266 4929
Web: *http://www.wia.org.au/vk4*

President	Ewan McLeod	VK4ERM
Secretary	Bob Cumming	VK4YBN
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VK5 Division South Australia and Northern Territory
(GPO Box 1234 Adelaide SA 5001)
Phone 0403 368 066
web:*http://www.sant.wia.org.au*
email: *peter.reichelt@bigpond.com*

President	David Minchin	VK5KK
Secretary	Peter Reichelt	VK5APR
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VK6 Division Western Australia
PO Box 10 West Perth WA 6872
Phone 08 9351 8873
Web: *http://www.vk6wia.org*
e-mail: *vk6wia@iinet.net.au*

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VK7 Division Tasmania
PO Box 371 Hobart TAS 7001
Phone 03 6234 3553 (BH)
Web: *http://www.tased.edu.au/tasonline/vk7wia*
also through *http:/www.wis.org.au/vk7*
email: *batesjw@netspace.net.au*

President	Mike Jenner	VK7FB
Secretary	John Bates	VK7RT
Treasurer	John Bates	VK7RT

Broadcast schedules

All frequencies MHz. All times are local.

VK1WI: 3.590 LSB, 146.950 FM each Thursday evening from 8.00pm local time. The broadcast text is available on packet, on Internet *aus.radio.amateur.misc* news group, and on the VK1 Home Page http://www.vk1.wia.ampr.org

Annual Membership Fees. Full $80.00 Pensioner or student $71.00. Without *Amateur Radio* $48.00

From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday at 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup *aus.radio.amateur.misc*, and on packet radio.

Annual Membership Fees. Full $80.00 Pensioner or student $63.00. Without *Amateur Radio* $50.00

VK3BWI broadcasts on the 1st Sunday of the month at 20.00hrs Primary frequencies, 3.615 DSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3ZWI on Victorian packet BBS and WIA VIC Web Site.

Annual Membership Fees. Full $83.00 Pensioner or student $67.00. Without *Amateur Radio* $51.00

VK4WIA broadcasts on 1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 10.135 MHz SSB, 14.342 MHz SSB, 21.175 MHz SSB, 28.400 MHz SSB, 29.660 MHz FM (rptr), 147.000 MHz, and 438.525 MHz (in the Brisbane region, and on regional VHF/UHF repeaters) at 0900 hrs K every Sunday morning. QNEWS is repeated Monday evenings, at 19.30 hrs K, on 3.605 MHz SSB and 147.000 MHz FM. On Sunday evenings, at 18.45 hrs K on 3.605SSB and 147.000 FM, a repeat of the previous week's edition of QNEWS is broadcast. Broadcast news in text form on packet is available under WIAQ@VKNET. QNEWS Text and real audio files available from the web site

Annual Membership Fees. Full $95.00 Pensioner or student $81.00. Without *Amateur Radio* $69.00

VK5WI: 1843 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.800 FM Mildura, 146.900 FM South East, 146.925 FM Central North, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 LSB, 7.065 LSB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. The repeat of the broadcast occurs Monday Nights at 1930hrs on 3585kHz and 146.675 MHz FM. The broadcast is available in 'Realaudio' format from the website at www.sant.wia.org.au Broadcast Page area.

Annual Membership Fees. Full $88.00 Pensioner or student $73.00. Without *Amateur Radio* $58.00

VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz, Country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton, 146.900 (R) Mt William (Bunbury).147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900,147.000, 147.200, 147.250 and 147.350 MHz..Also in "Real Audio" format from the VK6 WIA website

Annual Membership Fees. Full $71.00 Pensioner or student $65.00. Without *Amateur Radio* $39.00

VK7WI: 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.

Annual Membership Fees. Full $90.00 Pensioner or student $77.00. Without *Amateur Radio* $57.00

VK8 Northern Territory is part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz. The broadcast is downloaded via the Internet.

WIA Federal Convention 2002

Federal Executive for 2002/3.

L-R Don Wilschefski VK4BY;
Peter Naish VK2BPN,
Federal Secretary;
Ernest Hocking VK1LK,
Federal President;
Brenda Edmonds VK3KT;
David Pilley VK2AYD.

Presentation of the 2001 RD Trophy to Guy Fletcher VK2KU (left) representing VK2 Division. David Jones VK4OF, representing VK4 Division, last year's holders, hands it over.

Momento presentation to NZART visitors

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NZART Rep, David Wardlaw VK3ADW, VK5 Delegates David Box VK5OV and Martin Luther VK5GN

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